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FRED JONES, Chicago Manager
228 No. La Salle St., Chicago 1, Ill.
HOWARD F. McCLENAHAN—Cleveland Manager
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January 15th, 1955

Determination of True Vapor Pressures

William J. Tomsic
Union Oil Company of California
Brea, California

ABSTRACT

True vapor pressures for natural gasolines are normally calculated from fractional analysis. For some liquids, such as crude oils, fractional analyses of the highly volatile trace components are difficult to obtain with sufficient accuracy. Reid vapor pressures and true vapor pressures of crude oils are known to differ by as much as 1000 percent. Hence, the Reid vapor pressure cannot be used in place of the true vapor pressure.

A test method has been developed for determining the true vapor pressure of hydrocarbon liquids. The test consists of superimposing an external pressure on the liquid in excess of the true vapor pressure. The external pressure is gradually reduced until the bubble point is reached as determined by visual observation. Results are reported as the true vapor pressure in pounds per square inch at 100° F. The test uses readily available equipment and is simple to conduct. Excellent reproducibility has been obtained.

The test method has been checked against vapor pressures calculated from fractional analysis and from known temperatures and pressures in accumulators with excellent results.

A few of the potential uses for the true vapor pressure method are discussed.

The Reid vapor pressure method is used by the petroleum industry as a standard test for petroleum liquids. The Reid method is an arbitrary test method that has emanated after considerable test work on various vapor pressure methods. Some of these methods were the Biestle-Prather, Bureau of Explosives, Gard, Reid, and Wade-Campbell.①

The Reid vapor pressure is often mistakenly used in place of the true vapor pressure. For pure components, the Reid and true vapor pressures should be the same, but for petroleum mixtures, the true vapor pressure is generally higher. For some crude oils, the true vapor pressure is known to be as much as 1000 percent higher than the Reid.② This is due to the vaporization in the Reid bomb of the highly volatile trace components, methane and ethane, which changes the composition of the liquid whose vapor pressure is being measured. As the quantity of the lightest component present in the liquid is increased, the ratio of the Reid to true vapor pressure will tend to approach unity.

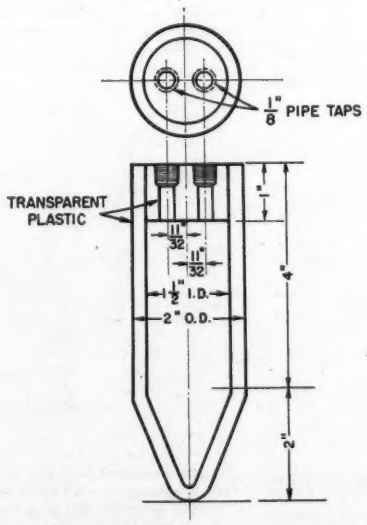

FIG. 1.—TRUE VAPOR PRESSURE CYLINDER

True vapor pressures can be calculated from the fractional analysis of the liquid. Present methods of analysis, however, do not indicate with sufficient accuracy the quantity of highly volatile trace components present in some liquids.②

The following test method has been developed for directly determining the true vapor pressure of any liquid. The method is based on the visual determination of the bubble point of the liquid at 100° F.

Apparatus

(1) A 2-inch by 6-inch transparent plastic cylinder with two top 1/8-inch pipe connections. The details of the cylinder are given in Figure 1.
(2) A 5-foot length of 1/4-inch Saran tubing with a Schrader check unit and adapter.
(3) A 500 to 1000 milliliter steel scrubber cylinder with two top connections; one connection extending to the bottom of the cylinder.
(4) A pressure gauge with a range of 30 inches vacuum to 100 pounds pressure.
(5) A mercury manometer with a 30-inch range.
(6) A constant temperature bath controlled at 100° F ± 0.2° F.
(7) Source of 100 pound air pressure.
(8) A vacuum pump capable of producing a vacuum of 1 mil-

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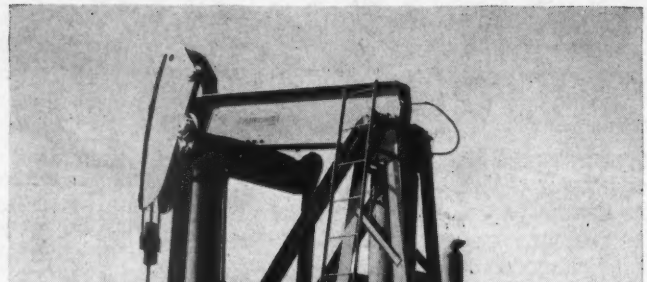
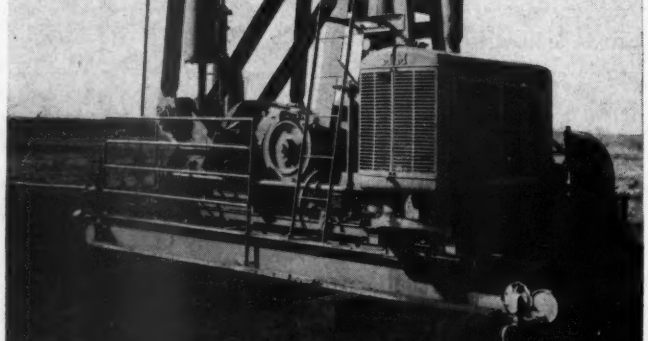
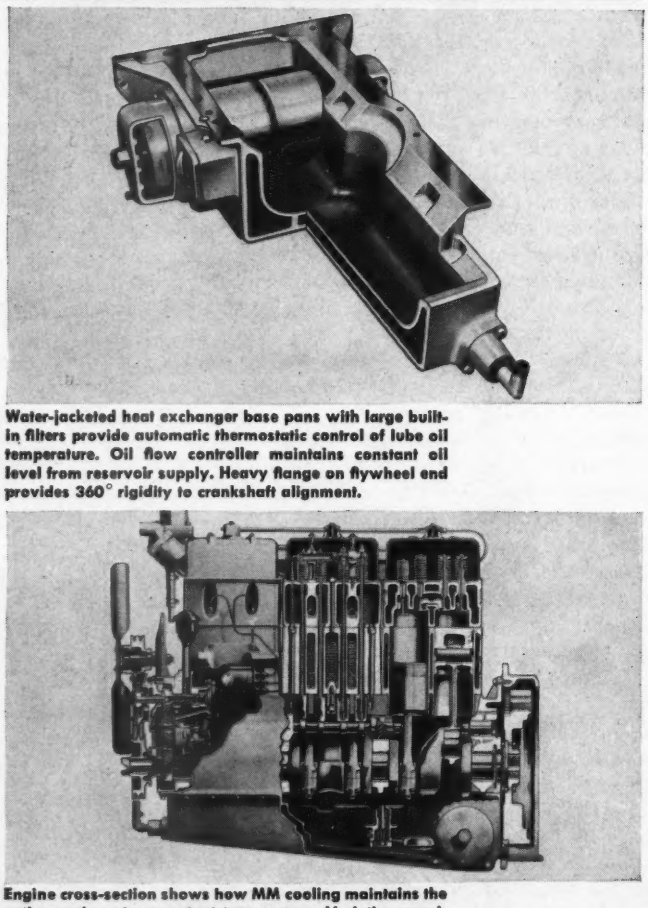




Water-jacketed heat exchanger base pans with large built-in filters provide automatic thermostatic control of lube oil temperature. Oil flow controller maintains constant oil level from reservoir supply. Heavy flange on flywheel end provides 360° rigidity to crankshaft alignment.



Engine cross-section shows how MM cooling maintains the entire engine at a constant temperature. Variation maximum is 4° to 5°. Automatic thermostatic control and by-pass system act as heater or cooler—engine runs at constant temperature under all operating conditions.

limeter of mercury.

The apparatus is assembled as shown in Figure 2. The valves are numbered to simplify the discussion that follows.

Obtaining Sample

Prior to obtaining the sample several boiling stones are placed in the cylinder. The boiling stones are necessary to agitate the sample, thus preventing supercooling during the testing of the sample.

The plastic cylinder is connected to the source of material to be tested using the Schrader check unit. The sample may be taken from any sample cylinder, tank, or line. Care must be taken not to contaminate the sample with air. The cylinder must not be connected to a source of pressure exceeding the working pressure of the plastic cylinder.

Open the tank or line valve and then open valve 5. Partially open valve 7 and purge the cylinder with at least 5 times its volume. Close valves 7 and 5 and the tank or line valve in the above named order. The sample is now ready for testing. The sample must not be allowed to exceed the sampling temperature prior to the testing of the sample.

Determining of Vapor Pressure

Connect the Saran tubing and valve 5 to the steel scrubber using the Schrader check unit and adapter. Open valves 4 and 1. Use valve 3 to pressure the apparatus in excess of the expected vapor pressure. Use the manometer for vapor pressures less than 15 pounds per square inch absolute. If the vapor pressure is expected to be greater than 15 pounds per square inch absolute, protect the manometer by closing valve 6 before pressuring with air. Open valve 5 and place the cylinder in the 100° F water bath. The amount of Saran tubing immersed in the water bath is not important.

In setting up the apparatus for measuring very low true vapor pressures, care must be taken to have the cylinder and tubing at the same elevations so that the static head effect is not present.

After 30 minutes have elapsed, crack valve 2, allowing the pressure to reduce gradually. At the same time, continually invert or shake the plastic cylinder under water, allowing the boiling stone to agitate the liquid. Each time the plastic cylinder is inverted, observe the solution for formation of bubbles. When bubbles are noted, close valve 2 and record the indicated pressure on the manometer or pressure gauge. If the bubble point pressure was missed by dropping the pressure too rapidly, the apparatus may be repressured. By shaking the cylinder, the bubble will be reabsorbed in the solution. The test can then be repeated.

If the sample has a vapor pressure less than 15 pounds per square inch absolute, the vacuum pump is used. An increasing vacuum is applied to the scrubber until the bubble point is reached.

As water will boil at about 0.95 pounds per square inch absolute at 100° F, special precautions are necessary to dehydrate samples containing water. The plastic cylinder is filled with approximately 50 milliliters of ethylene glycol. The plastic cylinder is then connected to the sample source by neoprene tubing connected to valve 7. A spare Schrader adapter is inserted in the check unit to allow liquid to flow through the Saran tubing. Open valves 7 and 5. Crack valve on sample source and allow material to flow through upright cylinder until the cylinder has been purged with at least 5 times its volume. The glycol will remain in the bottom of the cylinder. Slow the flow to a very low rate and invert the cylinder. Glycol will then flow into the Saran tubing. When the glycol reaches valve 5, shut supply valve and valves 7 and 5. Sufficient glycol will remain in the cylinder to dehydrate the material being tested.

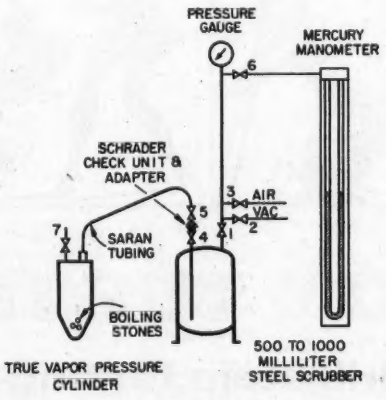


FIG. 2.— TRUE VAPOR PRESSURE APPARATUS.

The vapor pressure test is conducted in the usual manner.

The results of the test are reported in pounds per square inch of absolute pressure. The manometer readings are converted to pounds per square inch and either added or subtracted from barometric pressure depending on whether a pressure or vacuum reading was obtained. The gauge pressure is added to the barometric pressure.

The test method has given excellent reproducibility. The same sample of crude oil has been rerun and the results checked within a few tenths of an inch of mercury.

To verify the results of the test method, samples were run from accumulators whose temperatures and pressures were known. Agreement within one percent was obtained between the observed and measured vapor pressures. True vapor pressures were also run on samples whose fractional analyses were known. The calculated and measured results checked to within 1 to 2 percent.

Uses of True Vapor Pressure Method

The quality of a lean oil influences the absorption of the components in an absorber. Absorber efficiency will decrease as the light ends content of the lean oil is increased. The quality of a lean oil can be determined by the true vapor pressure method. (③.④) The true vapor pressure will indicate the presence of lights ends in the lean oil in cases where other control tests will not. In the same manner, the operation of any hydrocarbon stripper or reabsorber can be checked by the true vapor pressure method.

True vapor pressures at different temperatures are needed for process design calculations, estimating conditions in accumulators, safety considerations for handling materials, and numerous other uses. The Cox chart is commonly used to determine the change in vapor pressure of hydrocarbons with temperature. The vapor pressure test can be carried out at different temperatures to give a line on the Cox chart. We have found that for some crude oils, the vapor pressure does not increase as rapidly with temperature as predicted by the Cox chart.

Molecular weights can also be ap-

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proximated by the use of true vapor pressures. It is well known that when two liquids following Raoult's Law are blended together, the resulting true vapor pressure is the sum contributed by each liquid. Each liquid contributes an amount equal to its mol fraction times its true vapor pressure. A liquid whose molecular weight and true vapor pressure are known can be accurately blended in a second liquid with a known true vapor pressure. The true vapor pressure of the mixture can then be determined. The molecular weight of the other liquid can then be calculated by assuming molecular weights until the observed and calculated true vapor pressures are the same. Or if the molecular weights are known, vapor pressures of the blends of two or more liquids can be calculated if their individual true vapor pressures are known.

Vapor losses from storage tanks are also dependent on the true vapor pressure of the material in the tanks.⑤

Summary

A test method has been developed for the determination of the true vapor pressure of hydrocarbon liquids. The method is simple and gives excellent reproducibility.

References

(1) Petroleum World, Vol. 13, No. 12, Dec. 1928, P 105.

(2) Oil and Gas Journal, Vol. 53, No. 7, June 21, 1954, P 179.

(3) Boyd and Jones, Petroleum Engineer, Vol. 1, No. 13, Sept., 1930, P 40.

(4) Crippen and Laird, Petroleum World, Vol. 31, No. 1, Feb., 1934, P 38-40.

(5) Proceedings Thirty-Second Annual Meeting, API, Chicago, Illinois, November 10-13, 1952.

Acknowledgment

The test method was developed by Robert A. King of Union Oil Company prior to his death on July 6, 1954. It is hoped that his test method will serve a useful place in the technology of the petroleum industry.

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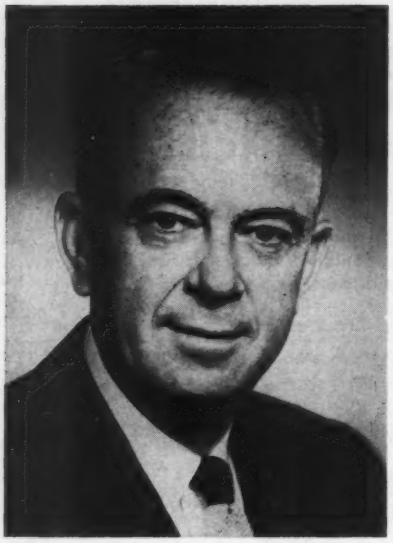
Scope Not Defined By FPC Modified Order

Russell Brown, Independent Petroleum Association of America general counsel, announces that a recent modified order issued by the Federal Power Commission, related to regulations governing independent gas producers, lacks definition of the scope of the FPC jurisdiction over independent producers. In a letter to IPAA members, he said the modified order prohibits two types of escalation clauses. He described them as price increases by reason of changes in the price or rates received by the purchaser and price increases based upon payment of higher prices by other purchasers usually referred to as "third party" favored nation clauses. "In its order," Brown went on, "The FPC recognized the desirability of clarifying the scope of its jurisdiction over independent producers and gatherers, but apparently is leaving this to be determined on a case-by-case basis."

Personalities IN THE NEWS

J. W. Miller Advances At Union Oil

Brea Chemicals, wholly-owned subsidiary of Union Oil Company, recently announced the election of J. W. "Win" Miller as executive vice-president and director effective January 1, 1955.



J. W. Miller

Mr. Miller was manager of Union's southwest marketing territory which includes Southern California, Arizona, New Mexico and Nevada.

Mr. Miller joined Union Oil in May, 1936 after many years as vice president in charge of sales for another petroleum firm and as head of his own marketing organization, United Oil Company of Utah.

He is the immediate past president of the Los Angeles Rotary Club.

John Abrams, veteran oil man, has bolted a Los Angeles Hospital following minor surgery to mend injuries incurred years ago while climbing the highest mountains in Montana's most primitive country.

Johnston Opens Denver Sales Office

J. E. Smith, Vice President of Johnston Testers, has announced that the company recently opened a new sales office in Denver to maintain closer contact with operating offices in the Denver, Salt Lake and Casper areas.

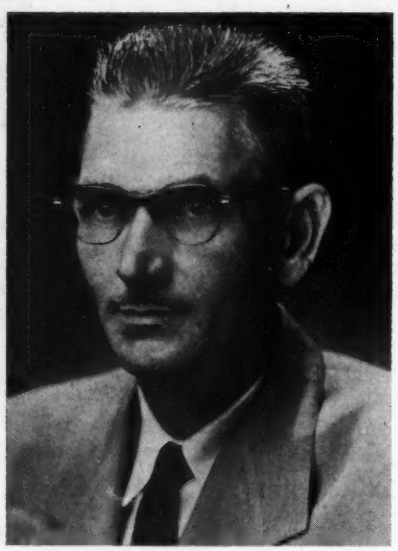
Wayne Gorrell

Wayne Gorrell has been transferred from Casper, Wyoming, to the new office which is located in rooms 702-3 in the Midland Savings Building in Denver, Colorado.

Attorney Charles A. Son, 78, for many years prominent in Los Angeles oil circles and Republican politics, died after a long illness. His most recent political activity was in support of Governor Goodwin J. Knight for re-election. Born in San Francisco, Son came to Los Angeles more than 50 years ago and engaged in the oil business in Kern County. Later, he became known as an expert on legal procedure affecting the oil industry.

McCullough Opens New Office

Mr. I. J. McCullough, President, McCullough Tool Company announces the opening of a new McCullough service location at Rio Vista, California in their Pacific Division. The new branch office at 32 Front Street, Rio Vista, is fully equipped to supply the oil industry with McCullough perforating, logging and fishing tool services.



K. A. Summers

The new branch will be under the supervision of Mr. K. A. (Kenny) Summers, a veteran McCullough employee who is well known throughout the California oil fields. A native Californian, Kenny Summers has been with McCullough for over ten years. He has had extensive experience in all phases of McCullough's operations, his last position having been Fishing Tool Supervisor at the Los Angeles service office.

McCullough now has five service branch locations in California and a total of 51 offices in the United States and Canada.

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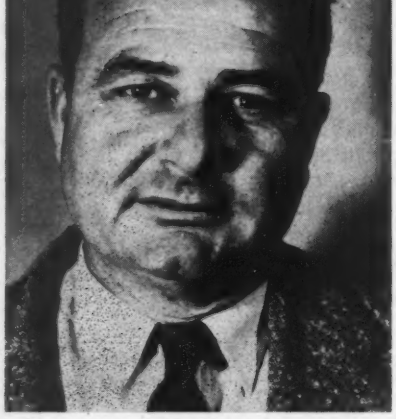
Wilshire Promotes Ouding and Waer

Ralph F. Forch, Wilshire Oil Company, Inc., Vice President and General Manager, has announced the promotions of John Ouding to Manager of Manufacturing and Roy Waer to Manager of the Crude Oil Supply and Exchange Department. Both have long records of service with Wilshire.

John Ouding

Ouding joined Wilshire in 1923 as a refinery foreman. After advancing through various supervisory positions, he was appointed Refinery Superintendent in 1952. In his new position, he will be in direct charge of all refinery operations.



Roy Waer

Waer joined Wilshire's sales organization in 1941 and became a fuel oil sales engineer in 1945, serving in this capacity until 1952 when he became Exchange Division Manager. In assuming his new duties he becomes responsible for the acquisition and movement of the refinery's crude oil requirements.

Miss Hildebrand Advances At McCullough

McCullough Tool Company's President, Mr. I. J. McCullough has announced the recent appointment of Miss Carla Hildebrand as Assistant Personnel Manager at their General Offices in Los Angeles.

Miss Hildebrand will be working under Mr. Harry Hester, Personnel and Export Manager, in supervising and integrating personnel matters for the McCullough Tool Company.

She is an active member of the Personnel and Industrial Relations Association of Los Angeles. A native of Indiana Miss Hildebrand has been with McCullough for over two years. Prior to this appointment she worked as secretary to Mr. Hester in the Personnel and Export Department.

Carla Hildebrand

The Association of Petroleum Wives in Bakersfield let nothing during the recent holiday season interfere with continuing service in conjunction with the Kern County Tuberculosis Association's mobile X-ray unit. Members of the APW worked in two-hour shifts under the directions of Mrs. R. W. Shoemaker, chairman of the club's community service project.

Pictured above is the staff of the Oil Tool Corporation at their annual Christmas dinner. Back row, left to right: A. B. Austin, C. M. Jasper, L. F. Osburn, O. A. Johnson, T. W. Cooke, W. C. Anderson, W. O. Anderson, H. M. Harshfield, R. J. Osburn. Front row, left to right: Dorothy Colton, Carol Skillman, F. E. Fairfield, President, Edna E. Sellers and Julia Chandler. At this dinner the semi-annual profits were distributed. Note the happy faces.

Rocky Mountain NEWS

Colorado—Idaho—Montana—New Mexico—Utah—Wyoming—Western Canada

Canada

Financing will be complete in mid-1955 and construction should begin on the Canadian side of the new three-way agreement to furnish natural gas to the Pacific Northwest and California. Westcoast Natural Gas Transmission Ltd., which will construct a line from the Peace River gas area of northwestern Alberta to furnish a supplemental supply to the San Juan Basin gas which Pacific Northwest Pipeline will deliver to the Northwest. The supplemental supply will allow PNW to sell Rocky Mountain gas to El Paso Natural Gas Co. for ultimate delivery to California. Westcoast set the tentative schedule of its construction in recent hearings before the Alberta Petroleum and Natural Gas Conservation Board. It is seeking an extension of its export permit. Peace River gas should be available in Vancouver by December 1956.

In a test of an 87,000 acre block, 42 miles south of the Cardium sand discovery in the Pembina area southwest of Edmonton, Texaco Exploration Co. has made its first discovery in the Pembina play. A wildcat there has flowed 40 gravity oil from the Cardium at a rate of 22 barrels an hour. McColl-Frontenac has an interest in the block.

A three and one-half year exploration program which will absorb $2,000,000 yearly has been scheduled for Alberta and British Columbia by Southern Production Co. of Fort Worth, Tex. The exploration expenditures are embodied in a new agreement between Southern Production and Canadian Atlantic Oil Co. Concentration will be made in the Peace River whose gas marketing potential has been greatly enhanced by the recent agreements among Pacific Northwest Pipeline, Westcoast Natural Gas Transmission Ltd. and El Paso Natural Gas Co. to give Canadian gas a share of the gas market in the Pacific Northwest.

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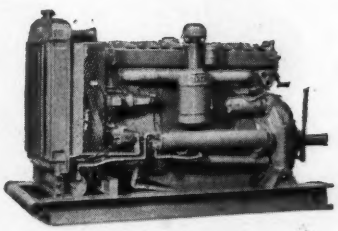

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One more step toward clearing the way for the eastward movement of Alberta Natural Gas was recently completed with the Alberta Petroleum and Natural Gas Conservation Board approving Alberta Gas Trunk Ltd.'s application to construct the Alberta trunk system which will deliver the gas to the Trans-Canada Pipeline at the Saskatchewan border. The approval still leaves undetermined the well-head price of Alberta gas. This can finally be determined when concrete plans are drawn for the construction of gathering systems, whose estimated cost will be $20,000,000. Trans-Canada has offered 14 cents per thousand cubic feet for gas delivered at the Saskatchewan border. The gathering costs and trunk-line costs will, naturally, be deducted to arrive at the well-head price. Some operators have protested the 14 cent price asserting that it does not cover the exploration and deep drilling costs.

North Dakota

A price increase to bring North Dakota crudes onto a scale comparable to the Mid-Continent has been announced by Stanolind Oil Purchasing Co. The price for 40 gravity crude has been increased to $2.90 per barrel. In October when Stanolind's parent company, Standard Oil of Indiana, began operations at its Mandan refinery the crude price was set at $2.50 for 40 gravity. The October price was disappointing to North Dakota producers who had hoped for a Mid-Continent $2.90. The refinery is now running at its 30,000 barrels per day capacity and the North Dakota Geological Survey has authorized a 12,000 barrel increase in the daily crude allowable.

Montana

Two new developments mark the latest impasse in the leasing of Mon-

The Idea's the Thing...

Oil discoveries start as an *idea.*

Lots of other elements are needed — geological savvy, leases, drilling skill and plenty of hard, spendable dollars.

But the thing that counts most is somebody's good idea. General Petroleum is constantly seeking new ideas for finding additional sources of crude oil in the Western United States.

GENERAL PETROLEUM CORPORATION
(A Flying Red Horse Company)

Mobilgas
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tana state lands. Early in December the Montana Supreme Court ruled that a 1953 amendment which permitted the state to lease for the productive life of a field violated the enabling act by which Montana entered the union. The state board has, in consequence, announced a sale of 20,000 acres for Jan. 18 under the old 20-year terms. The Montana decision will be appealed to U.S. Supreme Court. North Dakota and Wyoming both of which entered the union under similar enabling acts lease their lands for the productive life of a field.

California Co. will test the Winnipeg at a new Roosevelt County wildcat. The No. 1 Grimm is scheduled to go to 9700 feet. It is four miles northwest of a 1953 failure which had no shows. Otherwise there has been no drilling in the general East Bredette area.

The northernmost test of the West Poplar Unit has pumped 72 barrels of oil on completion gauge for Carter Oil Co. and Phillips Oil Co. No. 1 Tribal is two miles northwest of production at East Poplar. The Madison is the productive horizon.

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Wyoming

A Muddy zone of the Thermopolis shale has been identified as the producing horizon at Forest Oil Corp.'s No. 1 22-1 Grieve Unit, central Natrona County, Wyoming's prime discovery of the year. Forest has withheld identification of the formation until completion of a second wildcat on the 25,000 acre block. The No. 3 was dry and and the Muddy zone was not present, in the test drilled one and one-half miles southwest of the discovery, which had an initial flow of 1220 barrels oil per day. Forest has completed one off-set flowing 972 barrels per. A second off-set is drilling. The Muddy zone of the Thermopolis was described by Forest officials as slightly older than a true Muddy sand. The heavy initial flow coupled with its remoteness gives the discovery top billing in Wyoming exploration for 1954.

Tennessee Gas Transmission Co. has made its entrance into the Rocky Mountain oil play with the purchase of 88 1/3 per cent of the stock of the Far West Oil Co. The large gas combine will be interested primarily in oil exploration using the 140 well field at South Glenrock, discovered by Far West in 1950, as its base. The Far West staff will remain intact and in addition Tennessee Gas plans an expansion of the staff to begin oil exploration. Far West has confined its activities pretty largely to the development of the South Glenrock stratigraphic trap, one of the pre-eminent Wyoming discoveries of the post-World War II era in Wyoming. W. H. Curry, Casper, geologist has been vice-president in charge of Wyoming developments. He will remain with the new organization through a transition period. Other officers and principal owners of Far West are: Guy E. Green, San Antonio, Tex., president; A. D. Larson, secretary-treasurer, I. P. O'Neil and W. J. Walton, directors. South Glenrock has a gross production of 7500 barrels daily with a net to Far West of 1300. The field has been developed partly in partnership with Continental Oil Co. and Hancock Oil Co.

Colorado

In an area of little previous drilling and no commercial production against the mountain front southwest of Denver, S. D. Johnson has cemented casing at No. 1 Pallaora, Morrison, Jefferson County. A drill stem test recovered 6500 feet of 37 gravity, 55 pour point, Paraffin base oil in the Fort Hays. Johnson now has a complete operating interest in the well and surrounding acreage. Overland Oil has an override.

Possibilities of a new play in the Denver Julesburg Basin have been indicated at Nebraska Driller's No. 1 Nay, Weld County. Unofficial reports credit the test with a recovery of 4000 feet of oil from the interval 5430-5472 feet. The Niobrara has been encountered about this depth at other wells in the area. The test is now in the J sand where rumors report a show.

The refusal of the Colorado income division to refund its 1953 severance tax has cleared the way for the California Co. to test the constitutionality of the tax. The company will appeal to the tax director and then to the courts to maintain its assertion that the tax is double taxation and that it should

NEW CEMENT-OIL-SURFACTANT

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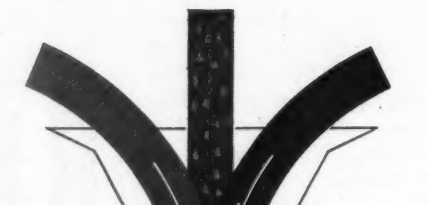

HALLIBURTON'S DOC

(DIESEL-OIL-CEMENT)

OFFERS MORE EFFICIENT CONTROL OF UNWANTED WATER...

Water-cement slurries proved valuable in squeezing to shut off bottom water. But improvement was needed. Oil-cement slurries revealed definite advantages over conventional mixtures. Now, adding a surfactant developed by Halliburton chemists gives increased dispersion and suspending properties to the diesel oil-cement slurry... makes it most effective in controlling unwanted water.

Halliburton's new DOC provides several advantages over ordinary slurries used in squeeze cementing:

- **It possesses high density. Pumpable slurry weights up to 121 lb./cu. ft. have been obtained. When this ratio of solids to fluids is penetrated by formation water, the resulting set material reveals high compressive strength and low permeability.**
- **It has unlimited thickening time. It cannot set until penetrated by water, allows use of portland cement in deep hole squeezing. The slurry can be handled readily, and the excess easily reversed out of tubing.**
- **Squeeze techniques are similar to those now used, but there are variations. For one, this unique slurry sometimes requires lower pressures, and in some cases, a smaller volume of cement. Waiting-on-cement time is governed by the setting time of portland cement and varies from 24 to 72 hours.**

Results in widely-scattered areas indicate Halliburton's new DOC offers a valuable and most efficient method of controlling unwanted water. Take advantage of DOC on your next squeeze job. Phone your local or district Halliburton office. Or contact Halliburton Oil Well Cementing Company, Los Angeles, California.

HALLIBURTON

CEMENTING SERVICES

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not have to pay a severance tax on its production on federal leases. The company has holdings in the Rangeley field.

Northeastern Colorado oil and gas fields will begin supplying Denver with gas if the Colorado Public Utility Commission approves a recent application of Natural Gas Producers Inc. The company proposes to build a 48-mile line from northeastern Colorado fields and gas processing plants to a connection with one of the main Colorado Interstate Gas Co.'s main lines serving Denver from the southeast. The company is a subsidiary of Colorado Interstate. It also proposes to serve Fort Morgan and Brush. Two gas extraction plants are planned for the area which has 325 producing wells. The entire project will entail 61 miles of pipeline at an estimated cost of $1,374,000.

Utah

Shell Oil Co. has located No. 1 North Boundary Butte, three miles north of the old Boundary Butte field, San Juan County. It is ten miles southwest of their recent discovery at No. 2 Desert Creek, first test to establish Pennsylvanian production in this southeastern corner of Utah. Shell has been very active in this area, leasing large blocks of Indian acreage. In this same general area Shell completed Arizona's first gas producer earlier this year.

Union Expands Brea Research Center

A million dollar expansion program for Union Oil Company's research center at Brea, California, to provide facilities for large-scale experimental units, pilot plants, additional laboratories and offices is scheduled for completion by next fall. it was announced recently.

Union is concentrating its extensive research and process activities at a single suburban site. To the original 1951 investment of $8.000,-000 for 14 major laboratory and related buildings will be added four other structures to house the company's enlarged and consolidated operations. All will be architecturally treated to harmonize with existing buildings.

Largest of the new units will provide 33.000 square feet of floor area for large-scale experiments, pilot plants and laboratories. This all-steel structure will be 65 feet high.

Adjacent to this area a second steel building will cover 27,000 square feet for experimental equipment which can be operated out of doors with individual instrument control houses.

Two single-story office buildings are also scheduled. One will provide 60 individual offices for development and process engineering personnel and drafting functions, the other will house special staff functions such as accounting, medical and other services.

Architects are Austin, Field and Fry. The general contractor is P. J. Walker Company. These firms designed and built the original research center.

Long String Run In Willows Wildcat

What is probably the longest string of 9 5/8-inch casing ever run in California has been set for protection at 12,470 feet in Humble Oil & Refining Company's H. C. Fredericksen wildcat on Section 16-20n-3w in the North Willows area of Glenn County. The string reportedly weighs about 498,000 pounds. Ohio Oil wins credit for setting the heaviest string in its deep test of the Paloma field. It was cemented at 10,947 feet with casing weight 513,732 pounds. In the Beehive Bend field, Richard S. Rheem, Operator, is about to spud-in Zumwalt No. 2-63 extension test on Section 2-19n-2w.

Sunray Boosts Wildcat Testing

Sunray Oil Corporation has reported that its exploratory and development drilling work will be hiked from 10 to 20 per cent during 1955. New year field operations are planned on a long-range basis in California, Louisiana, Oklahoma, Rocky Mountain and in south and west Texas areas.

San Joaquin Wildcat Fails

At Roberts Island in San Joaquin County, Harry C. Long as operator has pulled out of Arcady Holt No. 1-10 explorer on Section 10-1n-5e at a depth of 5300 feet.

Xmas Gifts to McCullough Employees

Approximately $236,000 has been distributed by the McCullough Tool Company as a share of the 1954 profits according to an announcement by Mr. I. J. McCullough, President. This sum was distributed among the 850 company employees eligible to participate in the profit sharing plan.

Of this sum approximately $145,-000 was distributed in proportionate shares of Class A Common Stock. The balance of $91,000 was paid in cash.

The book value of the Class A Common Stock increased to $5.16 per share as against $4.68 last year. In addition, a 20 cents per share dividend was paid to company shareholders during 1954. Total 1954 sales increased by about 14% over 1953 and will exceed $11,000,000 for the first time in Company history according to Mr. McCullough.

This is the ninth consecutive year in which McCullough employees have shared in the profits of the Company. 95% of the Company's present employees are shareholders and partcipated in 1954 profits.

The McCullough Tool Company, founded in 1926 by Mr. I. J. McCullough, is an international oil tool manufacturing concern and a leading oil well service company. They have plants in Los Angeles and Houston and service branches in all major oil fields in the United States and Canada.

Brown Drilling Activity Extensive

Brown Drilling Company, world-renowned contract driller, took down 90 wells in California during 1954 for a total of 504,789 feet. Since inception in 1937, Brown in California has drilled 1031 wells or an aggregate of 4,246,942 feet. In Texas on its own account, the company drilled 59 wells last vear of which 33 were producers and 26 dry. They were put down to depths varying from 300 to 6600 feet. Three rigs were busy in west Australia drilling for West Australia Petroleum Company. Off the coast of Trinidad, Brown opened work on the first offshore well in the British West Indies.

With Drilling Contractors

The first contract oil-well drilling job ever undertaken at Trinidad in the British West Indies is moving ahead under the expert guidance of International Brown Drilling Company of Long Beach. Members of the staff include drilling superintendent, maintenance foreman and drillers. The drilling personnel associated with this interesting venture was taken from the contractor's California organization. The balance of the crew was made up of natives of Trinidad. Art Albiston is drilling superintendent, Harry Cox, maintenance engineer; and Jerry Deevers, Ernest Dickten, Hubert Fleming and Jack Holden, drillers. The island of Trinidad lies in the southern part of the beautiful Caribbean Sea, about seven miles from the mainland of Venezuela. Trinidad is the second largest country in the British West Indies, with an area of 1754 square miles. Modern drilling equipment was shipped from the United States last September and was unloaded at Port-of-Spain, Trinidad. The equipment was composed basically of a National 55 drawworks, powered by National Supply Company 5-engine compound utilizing model 224-G Murphy diesel dual fuel engines. The outfit is torque converter equipped, with tandem driven C-250 and C-350 pumps. In order to eliminate any possible fabrication problems in Trinidad, the rig was fully assembled and unitized before shipment. Recent digging in Brown's Rough Range No. 1 exploratory well in Australia encountered a stratum of abrasive sandstone, which was described as "fairly devouring the best bits made." Be that as it may, the latest report told of breaking through this tough formation and drilling now is at a faster tempo. Brown's house organ, "Diggin' Dope" relates a yarn about an Australian trying to impress a Texan with the wonders of his country. Spying a kangaroo, the Texan finally admitted to the Australian that "Ah'll grant you one thing for sure, your grasshoppers sure are bigger'n ours."

Shell Oil Company's Brea drilling department the other month established a safety record of 1820 days without a lost time accident. This man-hours-worked-without-a-lost-time-accident record may be worldwide in scope. The five-year record is at least extraordinary as the company rig 5 has been in uninterrupted operation 24 hours a day, seven days each week for the full five-year period. Credit for the record goes to every man who has worked rig 5 since November 30, 1949, the date of the last lost-time accident. This just about included every man in Shell's Brea drilling division.

Tom Pike, who some months ago relinquished his duties as president of the Thomas P. Pike Drilling Company at Los Angeles to accept the post of Assistant Secretary of Defense in Washington, flew from the nation's capital to spend Christmas with his family in Pasadena.

Loffland Bros. Co., widely known contractor driller in California and elsewhere, is taking down the El Paso Natural Gas Company's exploratory well located south of Vale in Malheur County, Oregon. With leasing continuing at an accelerated rate in Oregon, contractors in the near future may be called upon to participate in numerous plays in that part of the Pacific Northwest. Standard Oil Company of California is understood among larger operators assembling lease blocks in Central Oregon.

California crude oil production declined somewhat during 1954. Nevertheless, Union Oil Company, first of the larger operators to turn to contractors to take down all its wells, registered some gain during the year. According to Union's house organ, On Tour, the company's producing rate at present is about 99,500 barrels a day, against 98,900 at the beginning of the year. The boost came about through discoveries and extensions in a number of areas, which have been followed up by persistent and lively drilling programs. The main areas of success were in the Sansinena field, Los Angeles County; North Guijarral Hills, Fresno County; and fields at South and East Tapo and South Mountain in Ventura County. In short, Union drilling operations more than offset the natural decline in old production.

Drilling Foreman Roy M. Moore of Thomas P. Pike Drilling Company, who some weeks ago was promoted from the rank of driller, is busy at the company's main office in Los Angeles. In accordance with the firm's policy as an aid to greater efficiency, he is studying all phases of company procedure, particularly as relates to paper work which coordinates the operative and administrative activities of the drilling business. Gene Graham, executive vice president, has made known that all field personnel promoted to supervisory positions will be given such a course in the future.

Martin Lerman, a young man of 24 of St. Louis, Missouri, is over in Greece as a prelude to using modern techniques on "pitch well" as Herodotus called them way back in 450 B.C. The wells are on the Ionian Island of Zante in a field regarded as the first recorded in history. Lerman's plan is in line with a law passed by the Greek Parliament last year by which foreign investors can convert a substantial percentage of capital investment and earnings in U. S. dollars. Geological studies on Ionian Island indicated that at approximately 1000 feet commercial oil production was a strong possibility.

Kennametal* Balls and Seats outlast best alloys 26 to 1 ...still in service in problem well pump

Strongly corrosive cuts from this Ventura Avenue field destroyed the effectiveness of the best alloy steel balls and seats in a maximum of three weeks' service.

A year and a half ago, the operator installed Kennametal top and bottom valving to meet these conditions. During this period, he has surfaced the pump every four months because of plunger wear, but has not found it necessary to replace the Kennametal Balls and Seats. Already they have outlasted the best alloy steels 26 to 1, and they're still in service.

Performance reports such as these are not unusual. Kennametal Balls and Seats are reducing the costs of string pulls, maintenance and loss of production wherever they are used. If you have a problem well, ask your pump service man to install Kennametal valving. It will cost you less in the long run.

Kennametal lightweight (titanium-carbide) balls have proven themselves in wide usage throughout the oil industry. They are one-third lighter than steel and about one-half lighter than tungsten-carbide. Outstanding results have been obtained in applications where there is excessive leaching in fluids containing hydrogen sulfide cuts, in pumps that pound for fluid and in slant pumping where there is excessive cage wear. Their resistance to wear, corrosion and electrolytic action represents an advance over any other type of ball as a utility unit. KENNAMETAL INC., Latrobe, Pa.

**Kennametal is the registered trademark of a series of hard carbide alloys of tungsten, tungsten-titanium and tantalum.*

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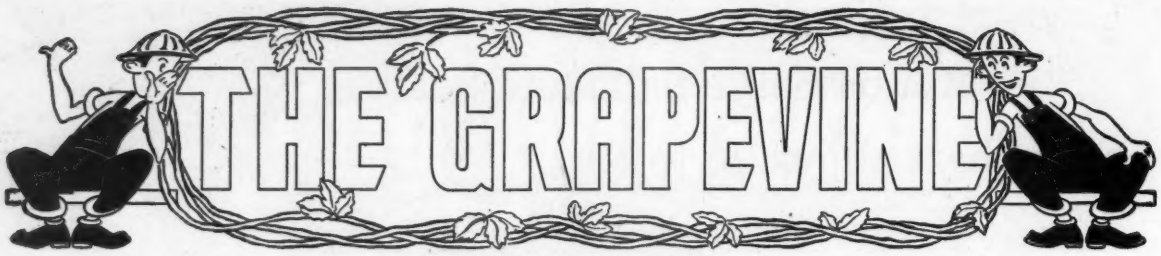

By RICHARD SNEDDON

The Aftermath

Our readers, presuming we have some, will be pleased to know that we are resting easy after the strenuous barrage of soirees and conventicles that thickened up the Christmas season no end and when it was all over left us personally in a nasty state of debilitation or something equally terrible. By dint of careful nursing, however, we have regained some of what is laughingly called our strength and we are again able to participate in such spirited indoor pastimes as gin rummy, tick-tack-toe, and pinning the tail on the donkey, that is, of course, if we are held up. Don't know how many more years we shall be able to make the complete cycle of Christmas whingdings but it gets tougher all the time. Before we were through with this year's succession, our legs were worn off up to the ankles, the old eyes had begun to look as if they were pickled in raspberry cordial, and our normally strong will had sluffed away to a pathetically weak wish.

We Meet the Press

A few days before Christmas we attended the annual Standard of Cal press party at the Biltmore, and had a wonderful time saying hello to many right substantial members of the fourth estate, as well as a goodly stash of elevated Chevronites. Among the latter were George O'Brien, vice president in charge of the Southern California area, a popular member of the Society for the Prevention of Calling Pullman Car Porters George, and a friendly and altogether pleasant gentleman; Stewart Brown, top public relations executive, and that noted disseminator of news, "John L." Sullivan, both from San Francisco; Ken Kendrick, the sales exec who is also a power in Petroleum Club and Jonathan Club inner circles; Elmer Olsen, the modest, easy to know, vice presidential assistant, definitely one of our favorite people; Clint Furrer, another sales biggie, widely known and well regarded in these parts; and last but far from least, H. H. "Bob" Roberts, Mr. Public Relations himself, who has hosted this affair for more years than we care to remember.

Of Public Relations

It is doubtful if there is any other Christmas get-together that more fully performs a precise function than this one. There are few established and really recognized news reporters within a hundred mile radius of Los Angeles who don't know and like Bob Roberts. To many of them he is the Standard Oil Company of California, and over the years Bob has so comported himself that the news men hold him and his company in the highest regard. This December meeting is the one occasion on which the reporters get a chance to greet Standard Oil Company just as a group of thoroughly human and totally friendly people. Being a sort of disinterested individual we are in an excellent position to pick up any stray bit of scuttlebutt that might circulate at a gathering of this kind, and we can truthfully say that in all the years that we have attended we have never heard a single word of criticism. The boys of the press love these assemblies and so do we, and we definitely feel that both institutionally and industrywise they are prime promoters of the best in press relations.

Among those Present

Incidentally, with our usual good luck, we found ourself seated at dinner with Carroll Parcher, the publisher of our abp (all but perfect) hometown paper, the Glendale News Press, whose column, "In My Opinion" is making a big hit out in the San Fernando Valley, and is one of our choicer literary tidbits. At a nearby table we noted Jack Sembower, the distinguished looking chap who directs Shell's public relations activities from San Francisco; Dick Larson, former legal whiz of the WOGA, now a big business tycoon; Bill Murphy, the always young appearing but fully capable Bob Roberts' aide; and practically all the oil, financial, and automotive editors, news and trade press, in the business out thisaway. It was by all means a fine concourse of interesting and accomplished people and we had a swell time trying to pretend we were one of them.

We Hie to the Red Mill

Another high class convocation at which we were the guest of that famed Caledonian, Gordon Campbell, one of the top abacists for the House of the Flying Horse, was the annual whoop-de-do of the Petroleum Accountants' Society at the Moulin Rouge. This was a delightsome interlude, featuring cocktail hour, a fine dinner, and a really top hole stage show, all liberally interspersed with more cocktails. This one carried us back in memory to the swaddling days of the PAS when we used to accompany Dave Kilgore to the outdoor whingdings and watch Dub Russell, Ed Leabow, Roy Hornidge, and Leon Berrett, engage in their yearly divot heaving tussle.

In the Early Stages

One of the first people we met

LESS BLOCK HEIGHT - MORE MAST HEIGHT
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UNITIZED
Tubing Block and Hook

You add extra working height to your rig when you use the compact, streamlined 45-ton Guiberson Type "A" Unitized Block and Hook—an assembly that has more work-saving features packed into less over-all height than any other tubing block made.

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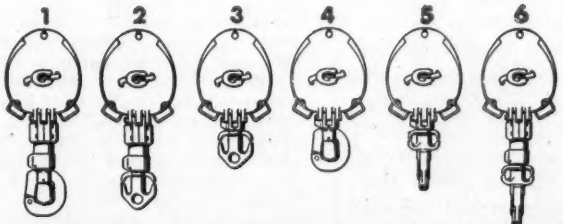
- Smooth, streamlined design—3 to 1 safety factor on yield

ONE *compact block* — SIX *interchangeable hook assemblies in SINGLE or DOUBLE SHEAVE*



1 Block and Spring Hook Assembly
2 Block and Spring Duplex Hook Assembly
3 Block and Short Duplex Hook Assembly
4 Block and Short Hook Assembly
5 Block and Short Triplex Hook Assembly
6 Block and Spring Triplex Hook Assembly

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PESA

when we entered the Moulin Rouge was Roger Duke, the GP chap whose photo we remember taking about 15 years ago, down on his knees on one of the Brentwood putting greens, trying to blow an obstinate golf ball into the hole. We understand that Roger has acquired considerable fame in recent years as a song leader. Then there was V. T. "Gil" Gilchrist, the Superior Oil Company comptroller, and prexy of the PAS, an affable chap who made us full welcome in spite of a somewhat unsavory reputation. Also cruising about the Moulin Rouge as if he knew his navigation was Cap Petersen, manager of Shell's treasury department, and first vice president of the accounting organization.

With Chaps and Cronies

And who should the second vice president turn out to be but our old friend and former associate, Ray Stine, the Union Oiler, whom we presently found in the company of L. P. Arnold, our long time ping pong rival, and a flock of other members of the upper 7600, including Ray Teal, Harry Kueny, Herb Crawford, George Anderson, H. A. "Lap" Lapham, and Larry Sweet. Among others with whom we exchanged brief but pleasant greetings were the secretary of the PAS, Jimmy Jackson who also functions adequately as assistant treasurer for GP; Stan Durkee, no relation we learned to Rod or Jim, but proficient chancellor of the Superior Oil Company exchequer; John Baumgartner, Ohio Oil Company balancer of income and outgo; Frank Bescos, scion of a noted athletic house, now associated with Seaboard; Roy De Kay, another efficient figure functionary of Ohio Oil Company; Harold Osborn, whose mathematical genius is exerted in behalf of the aviating equus; and Jack Farnan of the same illustrious establishment, who once wrote for us an interesting treatise on production accounting.

On Taxation

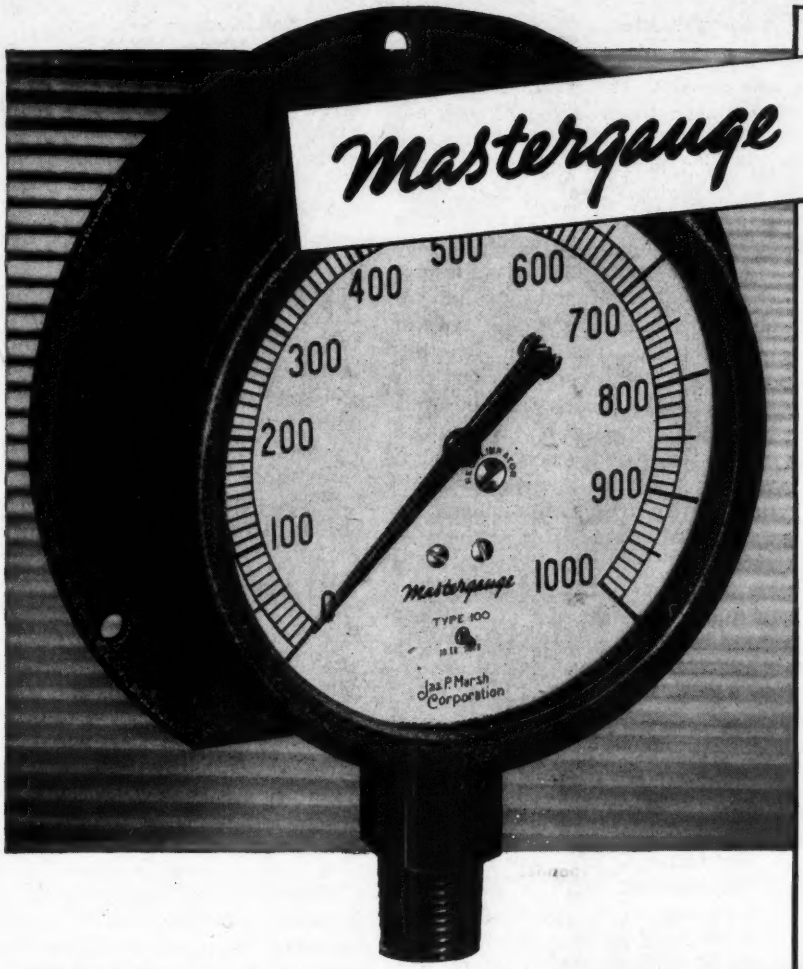
Others encountered during the evening were Rollin Ecke, vice president and secretary of the Farmers Insurance group whom we always used to confuse with Rollin Eckis the Richfield geologist, and sometimes even with Bob Eiche, the export magnate; Warren Gamel and Andy Anderson, a Richfield duo with a fine flair for the resolution of accounting problems; Grant Hoover and Bill Horstman, a pair of Pegasusian disciples, who know exactly where to place the decimal point; Milt Kerr, former Union Oil Company comptroller, now retired and consequently in a position to put the decimal point anywhere he darn pleases; Jerry Krause, the amiable Signal Oil & Gas Company taxpert; Ed Leabow, a favorite son of Paducah, Kentucky, who officiates in fine style as vice president of Dominguez Oilfields, Ltd.; Hil Rupprecht, one of Seaboard's top domino exponents, and pretty nice people besides; and Charlie Slack, the GP tax whiz who says it's getting so even our memories are taxed.

DIVOT LOFTER TURNS CHEF

Tom E. Morton, California division manager of Halliburton Oil Well Cementing Company, was born in Okmulgee, Oklahoma, and was graduated from the University of Oklahoma in 1940 with a degree in petroleum engineering. Prior to and during his college term, however, he had already been pretty thoroughly inoculated with the petroleum virus. He actually began his education as an oil man in Maud, Okla., with an independent casing pulling organization, and for some ten years garnered basic oilfield experience as a roustabout, roughneck, and pumper with various operating concerns. Following his graduation in 1940 he attached himself to the Oklahoma Oil Corporation as a petroleum engineer, working mostly around St. Louis and Nowata for the first year, and then made his initial contact with Halliburton as a truck driver in the Seminole. Thereafter, he served for three and a half years as a member of the Army Engineers' Petroleum Battalion, under Bud Giles, Firpo McGoey and other celebrities, and he claims to have fought stoutly in the bloody battle of Southern California, the principal engagement being at Santa Anita, and also to have braved the rigors of pipeline construction in the deep Southern Pacific.

On his return to the U.S. in 1946 he picked up where he left off as a cementer for Halliburton and has remained with that firm up to the present time, advancing in a series of well earned promotions to his present post. He came to California as division manager early in 1954 and has since done an excellent job of selling himself and his company in the far west. Tom is a good natured, likable chap, but can be fittingly serious when the occasion demands. In his spare moments, as the accompanying diagram shows, he occasionally belts a golf ball around any convenient pasture in an amazing series of short and decidedly unpredictable trajectories. Then he hies to his Santa Monica kitchen where, attired in the customary chef's hat and apron, he cooks up a delectable compote of curried veal that is positively out of this world.

Then there were Charlie Wilsmeier, the Western Gulf higher up who contends that the boys who are really having a rough time in business right now are the manufacturers of red ink; Bob Plomert, the Flying Horseman, who was thrilled quite some recently when the doctor chased him out and told him not to come back for at least six months; and finally Forrest Crum, the Hancock accounting genius, who tells about the small business man that had to make four mistakes before he could get his books to balance at the end of the fiscal year. We mustn't leave this narrative without mention of the two lovelies who took care of the reservations and were coincidentally very nice to the reservationists. We thought they were a pair of the better lookers borrowed from the Moulin Rouge stage show but, bless our soul, if they weren't Gladys Pedersen, the capable secretary of Jimmy Jackson, and Ethel Garland, the ditto ditto of Ray Stine. Summing it all up, the dinner and the show were excellent, and we hereby tender to Gordon Campbell our profound thanks for inviting us to such a



The leader has lengthened its lead!

From the day it was announced, the Marsh Mastergauge took the lead in the pressure gauge field. You are probably well aware of this . . . but do you realize that we have constantly given it plus qualities to still further *lengthen* its lead?

Look at the recent developments presented opposite. Unquestionably these are the three greatest strides in gauge development since the creation of the Marsh "Recalibrator."

Yes, the three basic gauge components have been brought to a remarkable stage of perfection in the Mastergauge. Certainly, for every critical service there is no gauge to compare with it!

Mastergauge is standard bearer for the world's broadest line of gauges and dial thermometers, each the best of their kind in the applications for which they are recommended. Ask for data covering your specific needs.

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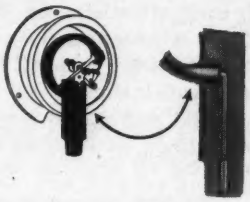
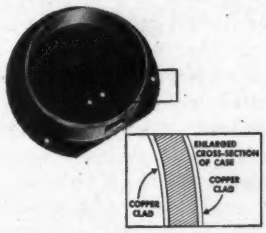


1—A better tube construction—

The Mastergauge always had the most effective joining of the bourdon tube to the socket . . . but . . . one-piece *construction is always better!* Welding these dissimilar parts posed a tough problem . . . but we finally solved it by a new process—the "Conoweld" process—exclusively ours. The photo of an actual section shows the perfect fusion. Socket, tube—even the end-piece—are fused into one leak-tight unit.

2—A better movement—

To convert the action of the bourdon tube into accurate pressure indication, the gauge movement must be rugged, practically frictionless, highly resistant to corrosion. A self-lubricating effect is achieved in the Mastergauge movement by using alternate stainless steel and monel—gears stainless, bushings "K" monel, and so on. A distinguishing feature is the "coined" sector gear. Note broad face of gear which results from this coined extrusion.



3—A better case—

Another development that has increased Mastergauge leadership is the new copper-clad, wrought steel case. The case has the strength of steel and the resistance to corrosion of copper. It is four times as strong as a cast iron case and one-third lighter. Final finish is a handsome corrosion resistant black enamel. Every case is fitted with Marsh safety blow-out plug—a typical advancement.

highly special event, and our hearty congratulations on his being such a generous host in the face of contrary national inclinations and instincts.

Bill Porter's Book off Press

Now veering off at a new angle: Do you feel awed in the presence of geologists? Do you tremble when your ears are assailed with multisyllables? Do you hope some day to have oil wells of your own? All right then, just stop dillying around the dally and order yourself a copy of Bill Porter's little book, "Basic Oil Geology." Begin reading it right away and we'll bet four dollars that in two nights of perusal you will lose every vestige of geological inferiority. Personally we have just finished digesting this opus and are already contemplating a foray into the consulting field. This is the most explicit and readable volume on the subject we have ever run across. It doesn't matter whether you expect to make practical use of the information it contains or are merely planning to store it in your cranial warehouse as material for future expounding among the cracker barrel set, you will find the book interesting, entertaining, and above all easy to read.

How and Where to Look for Oil

It is liberally spiked with the little oddities that give a real jag to an old oddity hunter like ourself and yet it is as basic as the foundation garment of a society matron. Actually, here is a means of learning quickly and authoritatively what oil geology is all about. And, please note that while it is written in simple, readily assimilable language even for the layman, it can by no means be classed as an elementary treatise. If you are really eager to understand how and where oil is likely to accumulate, you'll never find your questing more satisfyingly answered than in "Basic Oil Geology." Don't know what the book costs — we were lucky enough to find an autographed copy in our stocking at Christmas—but it is published by McGraw Hill and the author's full name is William W. Porter II.

A Special Offer

Since we never like to cause anyone needless embarrassment, those who wish to send a stamped, addressed envelope to this writer will receive a detailed account of what happened to Bill Geis, the recently returned globe trotter, and his Celtic associate, Jim McNeill, when they had the temerity a few days ago to challenge ourself and our unbeatable aide, Ed, "It's a fine type of play" Bartosh, to a domino contest. We might say here, however, that because of the debacle that followed, the children now have enough clothes to go to school in, and if we can convince the Care people that charity begins at our home, we may even be able to give them an occasional meal this winter. It's a bit saddening to have to do this sort of thing at the expense of such nice people, but can we help it if we were born with a large excess of the acquisitive corpuscles.

The Techniques of Sharpies

Speaking of dominoes, Milt Lewis, Milton W., that is, and Louie Waterfall, captured the Petroleum Club's Sixth Domino Tournament with a slashing win over L. L. "Red" Aubert, and Fred Keller, two of the toughest tile manipulators in the business. As nearly as we can find out, the superior drawing of the new champs was the deciding factor. Time and time again they caught their opponents off guard with neatly executed half gaynors into the boneyard from which they invariably emerged with the double five or some such high counting rock. The Aubert-Keller combination on the other hand had unusual difficulty in building up satisfactory multiples. The losers are reputed to be out at Soper's Ranch at this minute and intend to remain there on a long training schedule that will involve intense and uninterrupted practice in such matters as picking a good hand, setting rationally, pegging often and with dispatch, and developing appropriate anathema to hurl at their opponents. This domino business is not a thing to be taken lightly!

Odds and Ends

By way of last minute roundup, the new directors of the PPP for 1955 are W. O. "Bill" Todd and Frank Seaver in the two senior spots, and Hudson Drake, Roland Norris, Tal Ledbetter, Bill Anderson, Ed Stroud, and Don Pinnell, in the junior or work brackets. Nominated for the directorate of the Petroleum Club are Jim Kelley, Duke Follansbee Jr., and Peg Whealton. We hear, by the way, that Peg is out of commission with a broken leg and is now at home attending to his knitting. Hope he will soon be back on the beam! Same goes for Fred Tanner, the California Bank exec who was nursing a fractured foot last we heard. A letter from Charlie Schneider, down in Mexico City, sends greetings to all his California buddies. We hear that Fred Behrens has moved over to Richfield refining department and will be closely associated with Dave Day from now on. With which few remarks and our best wishes for a Happy New Year we leave you to your own devices.

Gerard F. Waller, new Union Oil Company Central America resident manager at San Jose, Costa Rica, grew up in an atmosphere accentuated by petroleum and international business affairs. His father, Dr. Frederick E. Waller, is Austrian consul-general at Los Angeles for the western United States and was founder and president of the Pan Pacific Oil Company for 30 years. The elder Waller for several decades advanced major oil company interests in Asia and South America and pioneered in the export of packaged petroleum products. The younger Waller, in view of his father's successes almost everywhere in the world, is particularly adapted for his new post. His mother is a native of Belgium, and his father, Austria.

Howard Atha, widely known oil man of Marietta, Ohio, is visiting his brother, George, at the latter's San Marino residence. George, a West Newport-Huntington Beach pioneer, made known that Howard is a leader in secondary recovery operations in Ohio and nearby states.

Field Development

Newhall Wildcat Quits At 7041 Feet

Plugged and abandoned at 7041 feet marked the final act with the Richard S. Rheem, Operator, Happy Valley Unit E No. 1 wildcat test on Section 3-3n-16w in the Newhall sector of Los Angeles County. On test of the interval of 6496-6594 feet the well showed some gas and oily mud.

Placentia Test Digs

Near the intersection of Placentia-Yorba and Jefferson boulevards east of Placentia, The Texas Company continues drilling ahead at 5500 feet with NCT-1 No. 1 on Section 32-3s-9w, Orange County. In the Yorba Linda area, Shell's Core Hole on Section 16-3s-9w has been abandoned at 4199 feet, after fish was recovered to 3935 feet.

San Bernardino Tests Drilling

Drilling has reached 2300 feet with Ord Oil Company's wildcat on Section 9-4n-3w in the Hesperia area of San Bernardino County, and 3300 feet in Adelanto Oil Company's test on Section 7-8n-5w at Adelanto.

Huntington Beach Well Spurs Boom

Completion of the Jack B. Crawford et al Huntington No. 4 in the Huntington Beach area appears to have started a rush of new drilling in the east side area. The well, on Section 14-6s-11w, was finaled on the pump and during the first 24 hours it made 24 barrels of oil an hour through a one-half-inch orifice, cutting 18 per cent mud and water. It was then beaned back to present production of 300 barrels a day through a quarter-inch orifice. Of top importance was the fact that the well penetrated a new shallow sand in addition to the deeper Crawford sand from which the operator is producing three other wells. The hitherto untapped sand is the Jones zone and the strike qualifies as the first time it has been found productive on the east side of Huntington Beach. The shallow sand was found solid and 175 feet in thickness from 3825 to 4000 feet, in addition to the deeper zone from 5280 to 5315 feet. No. 4 well, however, did not take in the shallow horizon as a dual competition was viewed as impractical. Taken in was the "C" division shale and Crawford sand in the top of the "D" division. The Crawford interests are now drilling three wells at a time in the new hot spot. Other operators active in the area at one operational point or another, include Southern California Petroleum, Standard Oil, Beloil, Neaves Petroleum, Holly Development, Cree Oil, C. D. Cunningham, and Atlantic Oil and Freeman Fairfield. Crawford is California's youngest oil producer and beside his proficiency in ferreting out oil is an accomplished musician. His avocation as a trumpet player often embellishes many leading social events in the Southland.

Cascade-Aliso Project Finaled

Indications are that C. W. Teater's Teater-Wadley No. 2 well

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A completion mud which permits no water to enter the producing formation.

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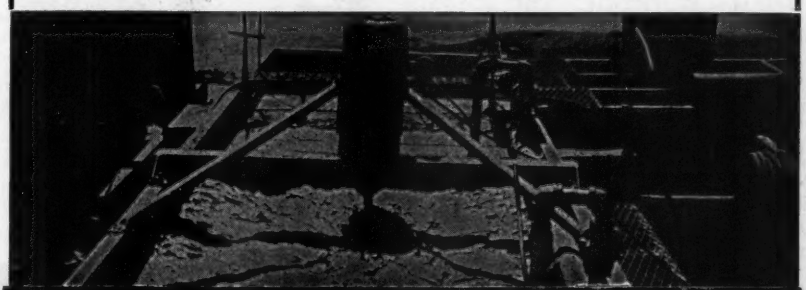

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on Section 25-3n-16w is just about as good as his discovery in the Cascade-Aliso area of Los Angeles County, which came in for about 100 barrels of oil daily on the pump. Teater holds approximately 1200 acres in a solid block where the play is progressing. Teater, who came to California several years ago from Michigan, developed some production in the Greenacres of Kern County before embarking upon his Cascade-Aliso venture. Teater as a Michigan operator was eminently successful and during his work in the field fell one or two wells short of an even 60 producers. Margaret V. Kahler appears to have her sights on Cascade-Aliso development and has plans formulated for a wildcat on Section 24-3n-16w or one mile north of the Teater well.

West Coyote Test Listed

Some 10,000 feet will be taken in by General Exploration Company's Emery No. 1 wildcat test, just starting on Section 24-3s-11w in Coyote West area. Pike Drilling Company has been assigned contract to take the well down.

Prado Dam Test Pumping

Pumping all water was the latest report on Al Godfrey Drilling Company's Botiller No. 1 exploratory well on Section 29-3s-7w near Prado Dam in Riverside County.

Playa Del Rey Wildcat Digging

Under the imposing banner of Edwin W. Pauley and Donald Frankel the Hughes No. 1 wildcat venture on Section 22-2s-15w at East Playa Del Rey in Los Angeles County is a couple of thousand feet down. Brown Drilling Company is contractor on the project, which is no great distance from a wildcat drilled by Bolsa Chica Oil Corporation two years ago. It will be recalled that the Bolsa Chica effort went to a total depth of 7474 feet and for a time elected to put out 60 barrels of oil a day from plugged bottom of 6916 feet. Moreover, this temporary disposition to produce and other information gathered by the Bolsa Chica venture certainly boosts the chances of the Pauley-Frankel wildcat in coming across enduring production of commercial degree.

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Buena Park Test Drills

At Buena Park in Orange County, Standard Oil Company's Pacific Community No. 1 deep wildcat on Section 26-3s-11w continues to drill ahead well below 3200 feet. Location is a hop skip and a jump from where General Petroleum and The Texas Company put down wildcats that failed to lay bare commercial petroleum. Standard's current job may go as deep as 14,000 feet for an inquisitory and complete test.

Airport Field Adds Big Well

Termo Company's Long Beach Fee No. 3 well on Section 19-4s-12w in the Long Beach Airport field has added new luster to the new producing area opened some months ago on the flank of old and famed Signal. Termo's new producer came in for 2202 barrels of 31.6 gravity oil a day from a total depth of 8638 feet and since has been restricted to 1180 barrels daily. Open are three intervals perforated in Miocene sand at 7347-7576, 7596-8304, and 8354 feet to bottom. Operators presently active in the area, include Hancock, Texaco, Turner & Associates, and Termo. Others are about to enter the play.

West Newport Well Producing

Miller Drilling Company has completed its Meline No. 1 test on Section 13-6s-11w at West Newport at 4533 feet for an initial yield in excess of 150 barrels of oil a day. The lease was obtained from George C. Atha, one of the first operators to launch full-scale development in the general area. On the same section, R. B. Watkins Operations has abandoned Newport Beach No. 6 at a redrilled depth of 2929 feet. The well the first time went to 3886 feet.

Fruitvale Adds Redrilling Job

Having cleaned out, Essex Oil Company is ready to plug and redrill an old well now known as

Essex-Lord & Green No. 1 on Section 11-29s-27e near Fruitvale in Kern County. The project, formerly carried as Westates Petroleum Company's Olive Community No. 1, is currently bottomed at 2901 feet. Coker & Swain Drilling Company is doing the work.

Tejon-Grapevine Pool Discovered

Augmenting their parade of successes on the Tejon Ranch, Reserve Oil and Gas Company and Edwin W. Pauley have put on production a new pool in the Tejon-Grapevine field, Kern County. The well, No. 41A-34 on Section 34-11n-19w, lies amidst lively Olcese sand producers brought to light in recent months by the combine. The new well began flowing from the Transition zone at the rate of 190 barrels of clean 18 gravity oil a day through a 20/64-inch orifice. In contrast to the Olcese sand, found under 5000 feet, the fresh producer was taken down to 2805 feet and between 2750 feet and bottom some 40 feet of Transition oil sand was penetrated. The 7-inch casing was cemented at 2740 feet. One-half mile westerly of the Tejon Hills field, Richfield has foresaken its Tejon D No. 81-8 on Section 8-11n-18w at 2324 feet because it was a duster. It was situated no more than a half-mile northeast of another dry hole drilled by Standard more than three years ago to 2600 feet, after contact with basement near 2590 feet. The Standard effort was tagged Tejon Ranch No. 4-65. The newest abandonment topped Santa Margarita at 1120 and basement rocks at 2225 feet.

Edison Grove Test Gets Going

All set to take down DLK No. 4 on Section 28-29s-29e in the Edison Grove area is A. M. Dunn, whose associates include John Lucian and Mitchell Kovaleski. The new test will be drilled to some 5000 feet at location surrounded by relatively shallow producers. Oil is expected to be found in the Pyramid Hills zone, which is giving up in wells a half-mile away. A check indicated that in the area 12 wells are drawing from what is called the DLK sand at an approximate depth of 1300 feet. Dunn and his partners own five of the producers and seven are held by Kern Oil Company, Ltd. Bender Oil Operations is represented by offsetting acreage and together with Kern Oil is a participating dry hole contributor to the deeper test. Miller & York will do the drilling chores. Incidentally Dunn pried out the shallow pool a year ago last October.

Maricopa Test Finds No Oil

In the Maricopa area, the C. Ray Robinson, Operator, Ripley No. 23-B-4 wildcat on Section 23-11n-23w has been abandoned at 1450 feet. Nothing of commercial interest was reported. On Section 3-11n-23w at Sunset Flank, Standard Oil has pulled out at 6478 feet from its No. 63-3K duster.

East Coalinga Test In Motion

James Lee Aydelott, former big league baseball star, is moving ahead at an intermediate point with his Jim No. 4 exploratory venture

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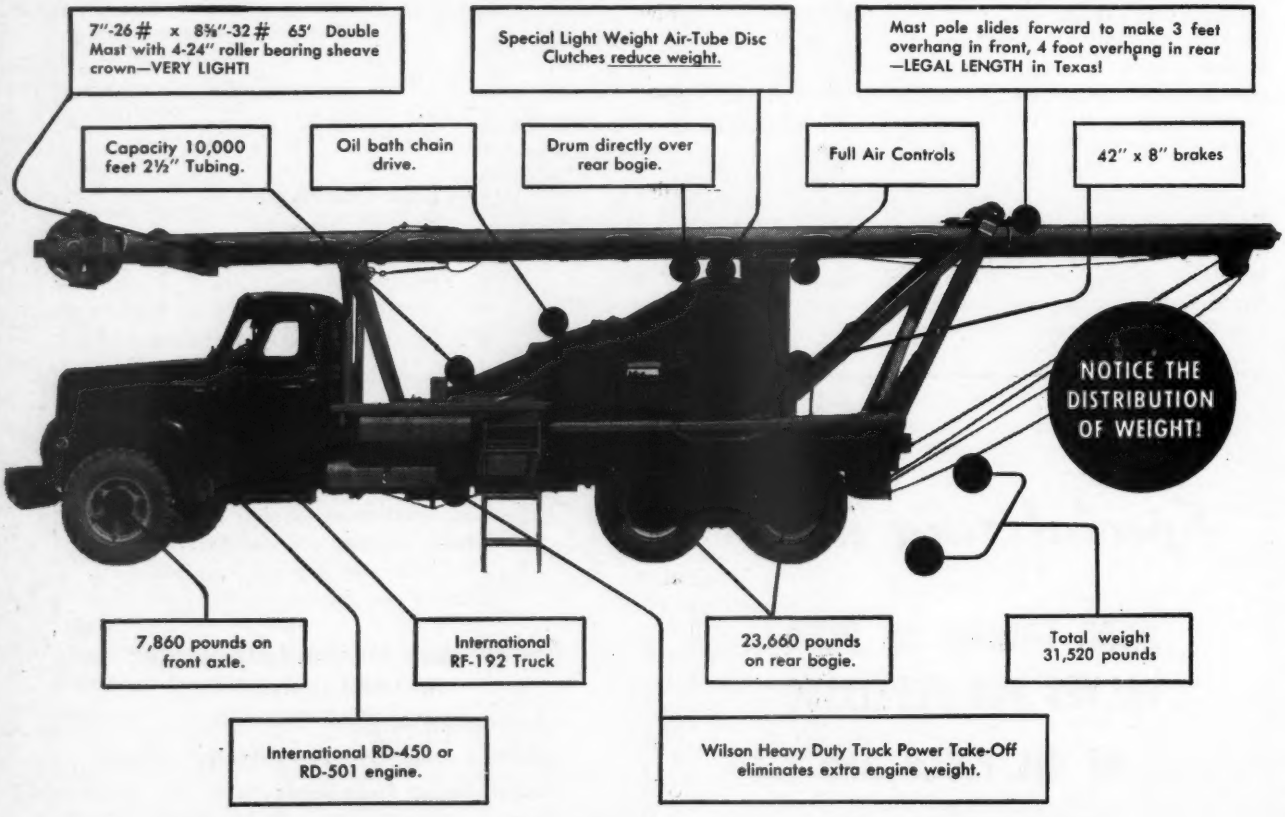
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POWER RIG EQUIPMENT

on Section 24-20s-15e in the East Coalinga area of Fresno County. Also under way is W. W. Holmes & Associates' No. 62-36 test on Section 36-19s-14e in the Coalinga district. Southwest of the Jacalitos field, the Cerutti & Thompson Transportation Company, Operator, No. 1 explorer on Section 10-22s-14e is making hole below 1200 feet. Southeast of Raisin City, Bostick Associates has abandoned its Santa Ana and Fresno Land No. 11-29 prospect job at 5300 feet. It was put down on Section 29-15s-18e.

Dagany Gap Developing

By successfully completing West No. 3 on Section 3-25s-18e at Dagany Gap, Joseph H. Gilliland and H. F. Ahmanson again have accounted for interesting development in that part of San Joaquin Valley. The well tapped a new zone from 1198 feet to bottom at 1308 feet for an initial yield of 2,225,000 cubic feet of gas a day by way of a 16/64-inch orifice. With a one-inch bean in use, the well tested 9,000,000 cubic feet of gas daily. The zone tapped is at a shallower level than sands producing oil in the area. This is the largest volume of gas ever produced in the general area and it was described as so clean the purchasing organization took it right into pipelines.

Delano Test Set To Drill

All set to drill is Tide Water Associated Oil Company's Kitt No. 72-29 exploratory well on Section 29-24s-25e in the Delano area. Location more specifically is some miles west of Delano townsite and along highway 99. The project is slated to primarily take a look at the Famosa sand in going to a depth of 9000 feet or approximately. The company's property spreads over 10,000 acres or so.

Ant Hill Test Quits

North of the Ant Hill field in Kern County, Christopher Oil Company has pulled out of its S.P. No. 1 wildcat test on Section 9-29s-29e. Hole evidently was lost in going to a total bottom of 3936 feet.

Paloma Test Still Working

Having plugged at 9819 feet, Ohio Oil Company is continuing tests of its KCL-A No. 72-4 well on Section 4-32s-26e in the Paloma field. Taken to 21,482 feet, tests of the lower formations failed to react along commercial lines. In the Cymric field, Ohio Oil's San Francisco Bank No. 1 on Section 23-29s-21e has been written off at 9369 feet.

Packwood Anticline Wildcat Venture Digs

Century Service, Inc., is rapidly nearing objective depth of approximately 2500 feet with its Twisselman Community No. 2 project on Section 18-27s-18e on the Packwood Anticline, south and west of Blackwells Corner. Engineering is being handled by George Roth on the test, which is chiefly interested in what the Point of Rocks sand may show at this location.

Carrizo Plains Test Moves Ahead

Moving ahead at an early point is Leonard Whiston's Leonard No. 1 exploratory well on Section 28-31s-18e in the Carrizo Plains area of San Luis Obispo County. A scheduled 4500-foot test, the venture is apparently on trend with fields in Cuyama Valley and in the vicinity of several unsuccessful drilling efforts. Some 2000 acres are under lease. In the Taylor Canyon area of the county, George J. Greer's Chimeneas-Arnold No. 28-24 wildcat on Section 24-32s-19e is going down steadily under the guidance of Tine Gaiser Drilling Company. Depth at last reports was around 1600 feet. Engineer is Ken Evans. Another interesting well drilling in the county is Intex Oil Company's Tar Springs No. on Section 25-32s-14e on the Tar Springs Anticline. Work is in the capable hands of Santa Maria Drilling Company.

Middle Dome Wildcat Works

Considerable attention is following progress of Middle Dome Corporation's No. 38-19V test going down on Section 19-23s-19e at Kettleman Hills Middle Dome in Kings County. The project is being taken down on property of the corporation of which Bolsa Chica Oil has a 25.64 per cent interest and Standard of California 74.36 per cent. Total acreage consists of 1170 acres. Bolsa Chica also has 1415 acres individually which is generally regarded as on structure. Present depth of the well is beneath 8000 feet, with the last several hundred feet or so bothered somewhat by lost circulation. The other month a protection string was cemented at 5448 feet. Standard is the actual operator of the Middle Dome job, with Rocky Mountain Drilling Company, contract driller. Franco Western Oil Corporation at present has three drilling endeavors going in Kings County's Pyramid Hills area.

Cuyama Valley Well Redrilling

Aeco Corporation has commenced redrilling and deepening of its British American-Shell No. 1 test on Section 13-11n-28w in the San Luis Obispo County portion of Cuyama Valley. The project was originally taken down to 6627 feet, plugged to 5000 feet and redrilled to 5735 feet. Mark D. Leff, Aeco president, announces that his company has acquired all interest in 1080 acres framing the wildcat location. Calling attention to the fact the company's holdings previously were only a third interest in 120 acres. Leff said enough information was gathered by primary operations to suggest that a discovery of importance is within the range of possible coming events. The oil executive described the land now held by Aeco as not in the "goat pasture class," and regarded as incorporating good potentialities. Aeco, he made known, has farmed out the 240-acre parcel on which the well is located to a group of persons on terms under which the corporation will retain 50 per cent interest in the well and the 240 acres. The balance of 840 acres will be kept by Aeco, it was explained.

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Camarillo Deep Test Scheduled

Richfield Oil is preparing to drill a 12,000 foot test known as Camarillo No. 1 on Section 32-2n-20w in Ventura County's Camarillo area. In the Timber Canyon area, Richfield is drilling its Atlas-Smith No. 2 on Section 14-4n-21w and its Loel-Maxwell No. 2 on Section 18-4n-20w above objection depths.

Moorpark Test Drilling Ahead

Near Moorpark in Ventura County, drilling is proceeding normally at an intermediate point in Petco Oil's Strathearn No. 1 wildcat on Section 6-2n-19w. Contractor is Pacific Drilling Company.

Seal Beach Adds Discovery Well

Hancock Oil Company has completed its new Alamitos No. 1 discovery well on Section 13-5s-12w in the Seal Beach sector of Orange County. Drilled to 8976 feet and then because of mechanical trouble plugged back to 7386 feet, the project at last reports was accounting for 313 barrels of 31.7 gravity oil a day. An initial potential of 400 barrels daily was good but fell below expectations because completion only took in the upper portion of the McGrath oil sand zone. Plans first drawn called for giving the final touches in a much larger measure of sand. But when a fishing job developed of impossible correction, the company decided to final the well from just the top of the horizon. The drill site is one and one-half miles northwest of Burt Aston's Sunset Beach discovery. Hancock holds 640 acres framing the discovery and another well is planned for immediate drilling in order to obtain a true picture of the capacity of the new producing sector.

Whittier Test Digs

In the Whittier Narrows area, Western Gulf Oil Company's Raney No. 1 wildcat venture on Section 8-2s-11w keeps drilling at 4300 feet, according to late reports. Ben Owens Drilling Company is in charge.

Oxnard Area Adds Producers

Two more wells have been completed in the Oxnard area of Ventura County. Standard Oil's McInness No. 303 on Section 6-1n-21w started off from a total depth of 10,060 feet at the rate of 122 barrels of oil in 12 hours, including 64 barrels of wash oil, through a 17/64-inch bean. Gas yield was 223,000 cubic feet during the period. The Lloyd Corporation, Ltd., Borchard No. 2 test project on Section 31-2n-21w came in from 9479 feet for a net yield of 207 barrels of oil daily by way of a 16/64-inch choke. Rocky Mountain Drilling Company put down the former and the latter was a Drilling & Exploration Company contract assignment. Going back to Standard, that company's Thatcher No. 302 on Section 31-2n-21w is making hole at 8000 feet. Lenox No. 302 on Section 6-1n-21w is digging below 5000 feet. On the same section, Oxnard Operations' J. H. No. 1 well keeps drilling at a depth last reported near 8500 feet. Also on the same section, Lloyd has opened work on W. R. Livingston No. 1. Southwest of Oxnard production, Southern California Petroleum's Merchants-Hartman No. 1 wildcat on Section 22-1n-22w is well beyond halfway to objective depth of 10,000 feet. Location, to be more exact, is three miles southwest of Oxnard production and one and one-half miles east of Port Hueneme, where SCPC's Petit No. 1 is in the early stages on Section 22. The operator shares interest in the test with Merchants Petroleum Company and others. Wells in the 300 numbers tell that target is the deepest zones. The 100 numbers indicate drilling will be to the first sand.

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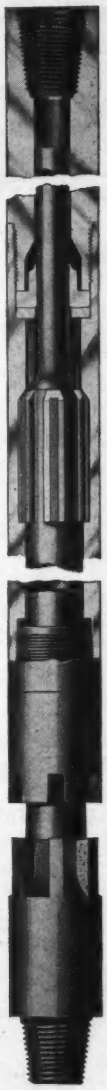

RELEASING type fishing tools such as spears, sockets, overshots and cutters require downward blows for release of slips or grapples . . . *and the handiest tool you can use to obtain downward blows when fishing with equipment of this type is the Bowen Bumper Sub.*

Operators not only find it a valuable tool for fishing jobs, but in addition use it above the bit or reamer when drilling in sticky formations. The Bumper Sub will jar down by simply dropping or springing the weight of the run-in string the full length of the stroke. Or —to free a bit or reamer—it is instantly ready to jar *up* by merely taking tension on the string and suddenly releasing it until the Sub is partly open. The rebound of the pipe causes the Sub to strike a hard upward blow. *Moreover, you can alternate upward and downward blows without making any adjustment in the tool from the surface!*

During regular drilling or fishing operations, the Bowen Bumper Sub is an integral part of the string. It easily withstands all the torsional strains of drilling and is packed off with a special abrasive and pressure resistant packing that permits high circulation pressures to be used without leakage. It is amply strong to stand the abuse of drilling and fishing under all conditions, and requires only occasional servicing.

You can use the Bowen Bumper Sub at any desired point in the drilling or fishing string. It is made for use with all standard sizes and types of drill pipe, and in special types which permit free passage of wire line tools, core barrels, etc. *Write Bowen direct for full details!*

SR BOWEN CO

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SANTA FE SPRINGS, CALIFORNIA
EXPORT OFFICE:
30 ROCKEFELLER PLAZA
NEW YORK CITY, NEW YORK
EXPORT REPRESENTATIVE: VAL. R. WITTICH, JR.

Santa Barbara Wildcats Active

Santa Barbara County is the scene of at least four wildcat wells at various operational points. They include Shell Oil Company's 12,000-foot Covarrubias test on Section 32-5n-30w at El Capitan, MJM & M Oil Company and Clyde Hall Drilling Company's Delaney No. 11-X on Section 23-9n-33w at Cat Canyon, Richfield Oil Corporation's No. 1 on Section 28-1s-29w on Santa Cruz Island, and Natural Resources Inv. Corporation's Rutherford No. 1 on Section 31-5n-29w at Elwood. In the East Cat Canyon area, Slick Moorman's Palmer-Stendel No. 5 on Section 24-9n-33w is idle at 3912 feet. In the Cat Canyon field proper, Union Oil's Bell No. 151 on Section 26-9n-33w has been added at 5942 feet for 257 barrels of 14.9 gravity oil a day, cutting about 6 per cent. In the Orcutt field, Shell has staked location for Careaga No. B-1 on Section 31-9n-33w.

Yolo County Wildcat Begins

Spudded-in and making rapid time through the shallower formations is Standard Oil's Salisbury No. 1 explorer on Section 29-10n-1e in the Madison sector or a half-dozen miles north of the Fairfield gas field in Yolo County. Back in 1945 The Texas Company on the next section north took down its Salisbury No. 1 to 7165 feet without attaining commercial success. Brown Drilling Company is in charge of drilling.

Our Face is Red!

We never dreamed... that the oil industry would respond so enthusiastically to our introduction of the "Royal Scintillator." We were caught with our production down. We not only did not have enough instruments to supply the demand, we didn't even have enough catalogs. We apologize and wish to assure our customers that we are now in a position to give prompt service.

Not everyone agrees that the radiation survey technique is a proven method of oil field exploration. We agree that not enough data is available as yet, however, there is a growing body of opinion which holds that this is a valuable technique. Recent very encouraging results support this opinion.

We cannot guarantee that the Model 118 Royal Scintillator will locate oil, but we can guarantee that the Royal is the best instrument made for investigating the radiation pattern existing around oil fields. It is also the best instrument made for uranium prospecting, and its use for this purpose should not be overlooked by oil geologists.

Contact your nearest dealer or write direct for free pamphlet on "The Principles of Oil Field Detection with Scintillation Counters" and complete catalog on Geiger Counters and Scintillators.

PRECISION RADIATION INSTRUMENTS, INC.
2235CW.S. LA BREA AVE., LOS ANGELES 16, CALIFORNIA

Name_____ Title_____

Company_____

Address_____ City_____ State_____

PRECISION RADIATION INSTRUMENTS, INC.

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Appointments Announced For State Chairman Natural Gas and Oil Resources Committee

Six western oil men have been named by Felix Chappellet, chairman of Regions 1 and 9 of the Natural Gas and Oil Resources Committee, as state chairmen to direct an information program to acquaint the public with the full import of the recent Supreme Court decision which gives the Federal Power Commission authority to regulate at the well head the price of natural gas which is to be sold for transmission in interstate commerce. Chappellet is vice president and general manager of Western Oil and Gas Association, Los Angeles.

The state chairmen are: Southern California—H. W. Bragg, Union Oil Company of California, Los Angeles; Northern California—T. C. Moroney, Honolulu Oil Corporation, San Francisco; Arizona—J. P. Acton, Standard Oil Company of California, Phoenix; Oregon—J. M. Stewart, Standard Oil Company of California, Portland; Washington—A. E. Horn, Jr., General Petroleum Corporation, Seattle; Nevada — R. M. West, Texas Company, Reno.

Harry Morrison, assistant general manager of Western Oil and Gas Association, is vice chairman of Regions 1 and 9 of the Natural Gas and Oil Resources Committee.

Lewis F. Shaw, representative for Western Oil and Gas Association in Seattle, has been named co-ordinator for the Northwest.

Under the direction of each state chairman, committees of local oil men will be formed in each area throughout the West to accomplish the public information program by providing speakers, distributing literature, making newspaper stories and advertisements available to the press and, in general, carrying on a public relations program in their own communities.

The Natural Gas and Oil Resources Committee was formed in October to conduct this information program on natural gas. The committee functions independently of existing informational and public education groups within the petroleum or natural gas industries. Its membership consists of officers and other executives of oil companies and natural gas companies.

National chairman of the Natural Gas and Oil Resources Committee is L. F. McCollum, president of Continental Oil Company, Houston, Texas. Paul Kayser, president of El Paso Natural Gas Company, Houston, is national vice chairman. Headquarters of the committee is in New York City under the direction of Baird H. Markham, executive director. The information program will be carried on throughout the U.S. by local oil men in 15 regional districts. California, Arizona, Nevada, Oregon and Washington comprise Regions 1 and 9.

In June a new interpretation of the Natural Gas Act of 1938, by the U.S. Supreme Court, placed the production of gas by independent producers sold to interstate pipelines for resale under regulation of the Federal Power Commission, even though Congress did not have this intention when writing the law. To clarify its intent, Congress passed a bill in 1950 which specifically exempted gas production from Federal control, but the bill was vetoed by President Truman. The Federal Power Commission itself has on eleven separate occasions held that it had no such jurisdiction.

The Natural Gas and Oil Resources Committee was formed so that factual information about the industry could be brought to the attention of the public. Its activities are centered around a public relations program to inform the public about the business of exploring for and producing natural gas and the merits of a free natural gas producing industry operating in a competitive economy.

The committee believes the public should be aware of the following facts:

1. The natural gas producers of America, when free of Federal controls, furnished consumers with greatly increased supplies of gas at low cost.

2. Federal control can curtail exploration, deplete reserves, and inevitably diminish supplies of natural gas.

3. Federal control of gas production cannot effect any significant saving for consumers because about 90 percent of consumer bills represent transportation and local distribution costs which already are regulated.

4. Because of the keen competition in producing and gathering natural gas among thousands of producers, there is no need for regulation.

5. Governmental control of the competitive production of natural gas opens the door for the spread of Federal regulation to any other competitively-produced commodity.

Edison Well On Production

Des Moines Oil Company's Cauley No. 10 on Section 16-30s-29e in the Edison field is in from a plugged depth of 4790 feet for a primary output of 362 barrels of 22 gravity oil a day. Drilled to an original bottom of 4823 feet, open is the interval from 4639 feet to plug. Engineering credit goes to Fred Sperber and drilling skill to Stanford & Martin Drilling Company. The new producer offsets westerly Kalpure Oil Company's Des Moines No. 1, which is producing 165 barrels or so under restriction. On Section 27-30s-29e, Mark Morris has started his Pauline M No. 4 well.

Strand Wildcat Drilling Steadily

Some 660 feet south and west from the northeast corner of Section 12-30s-25e and no great distance from the Strand field, Shell Oil Company's Posuncula No. 1 wildcat is drilling ahead below 2800 feet. In passing, the Strand field is putting out from both the Upper and Lower Stevens sand measures. It was discovered 16 years ago by Continental Oil and Tide Water Associated with an inquisitive project less than a mile southeast of Shell's job.

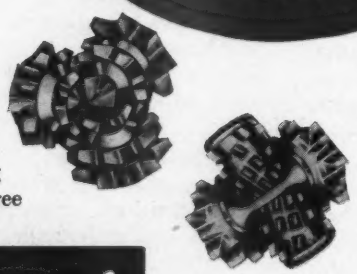
McDonald Anticline Well On Production

Present production of Ferguson & Bosworth's new Layman No. 14 well on Section 18-28s-20e in the McDonald Anticline field is at the rate of 57 barrels of 24 gravity oil a day from 2210 feet. A cut of about 35 per cent was reported.

"Hey, Doc'—can you fix us up with these long-tooth deals?"

When you want *fast* digging in top formations (and who doesn't?) these are the bits that really deliver! The long teeth, of field-proven design, and the rugged construction give you more hole per hour, plus longer time on bottom. And these tough bits not only make fast, straight hole in chalks, red beds, and unconsolidated sands, but they also do well in anhydrite, the medium-soft limes and in formations with harder streaks and stringers when appropriate weights and speeds are employed.

H. C. Smith long-tooth bits are available in either three-cutter or four-cutter models, with either regular or jet-action circulation. Like all H. C. Smith bits, they feature all-forged bodies, hard-faced cutter teeth and triple-bearing construction for long, trouble-free service life.



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GENERAL OFFICES, EXPORT OFFICES AND PLANT: COMPTON, CALIF.

Pioneers in Developing the Long-Tooth Bit!

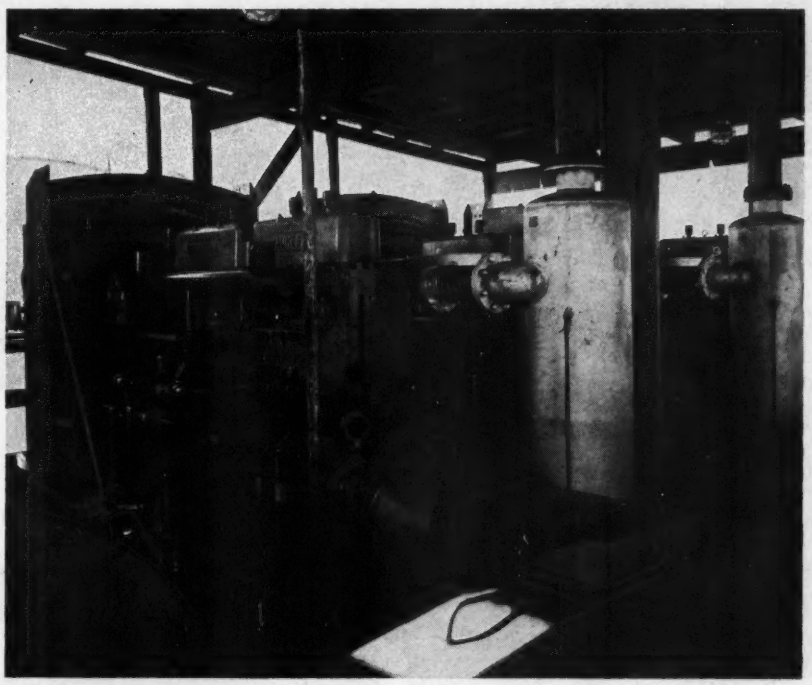
BRANCHES IN ALL PRINCIPAL OIL CENTERS IN THE UNITED STATES AND CANADA

CALIFORNIA BRANCHES: AVENAL • BAKERSFIELD • COMPTON • CUYAMA • NEWHALL • RIO VISTA • SANTA MARIA • VENTURA

Severns Repowers Drilling Rig

In order to acquire additional power for faster and more effective operation in present day deep drilling, Severns Drilling Company recently completely remodelled the power assembly on its National 100 rig, substituting three new Model 6-LRZBU Waukesha engines for the old equipment. The original power plant consisting of three Model 6-LROU Waukesha units had been in service for ten years and was still in good condition at the time of the change, but lacked sufficient power output for the more rigorous drilling operations contemplated by the Severns Company in the future.

The new engines are six cylinder models with 9 3/4-inch bore, 8½-inch stroke, and a 3520 cubic inch piston displacement. They are capable of developing 496 horsepower at 1200 rpm, using natural gas fuel of 1000 BTU per cubic foot; and 550 horsepower at the same speed when using butane-propane fuel.



These machines represent the latest word in Waukesha design and construction. They are equipped with hardened and counterbalanced crankshafts, aluminum pistons, and vibration dampeners, all of which contribute to smoother operation at high speeds, and general reduction of internal stresses. Dual-ignition, with heavy duty, safety-type magnetos insure against sudden loss of power at critical moments. Water-cooled exhaust manifolds keep operating temperatures within effective limits, and all incorporated features are designed to give optimum service under the full range of operating conditions. Among these features are wet sleeve cylinder liners; Stellite faced exhaust valves and exhaust valve seats; precision bearings; lubricating oil coolers, large capacity sectional core radiators; and rugged box-type bases with a sump capacity of 20 gallons of oil.

Frazier Wright Company, au-

WILSON RESLEEVING

makes old tool joints better than new!

WHEN TOOL JOINTS become worn, risking drill pipe failures and costly down-time, bring them to WILSON for a complete overhaul. Shrink-fitted with special WILSON sleeves, these joints are equal to, or actually outwear new, with a decided saving in cost.

Here's how WILSON reclaims joints for additional drilling footage...

1 WORN JOINTS are "peeled" . . surface machined to remove cut-outs and scars, restore original roundness.

2 OVERSIZE CHROME-MOLY sleeve is first heat-treated, then shrunk in place. Increase in life is equal or superior to original joint.

3 SLEEVES ARE securely welded and turned to size. Threads and shoulders recut, if needed. Perfect make-up is assured... all thread gauges are checked against API Master Gauges. Joints go back in service stronger, safer, good as new!

THREADING, PIPE STRAIGHTENING AND JOB SHOP SERVICES

WILSON FACILITIES efficiently perform all types of threading operations—on drill pipe, casing or tubing; regular API threads or Hydril. For Pipe Straightening, Equipment Repairs or complete Rebuilding Operations on special equipment, call on WILSON, Ventura's largest job shop.

Box ends receive special attention. Sleeves are made in two sections, doubly welded. No intermittent tack welds to distort box. Full circumferential beads on shoulder and in split center equalize stresses, maintain roundness and add extra reinforcement to box.

WILSON OIL TOOL CORP., LTD.

816 N. Ventura Ave.
VENTURA, CALIFORNIA
Phone Miller 3-5407

thorized Waukesha distributor for Southern California, furnished the new power units and helped install them on the rig. The latter, according to Ashley DeWitt, partner in the Severns Drilling Company, is now drilling on Loel-Maxwell No. 2 in Timber Canyon, near Santa Paula. With its modernized power plant, the rig is capable of drilling at any depth to a maximum of 15,000 feet.

Baroid Awarded Advertising Honors

The Direct Mail Advertising Association recently awarded Baroid Division, National Lead Company, the 1954 "Best of Industry" top honor in the oil well service and equipment classification.

This coveted award, which was also won by Baroid in 1953, is given to the oil field supplier with the best direct mail advertising program for oil men.

The campaign which Baroid entered in this national competition included all technical literature, house magazines, data book sections, sales training bulletins, field engineering reprints, distributor lists, and catalogs.

Major credit for this outstanding honor must be shared by all departments at Baroid. Material for the campaign originated or was specified by men in sales, advertising, engineering, production, research, and distribution departments. Baroid Division is the only firm with a Texas home office ever to win the award.

Jorgensen Buys San Francisco Steel Firm

The Earle M. Jorgensen Co. has purchased the entire operation of Tayler & Spotswood Co., pioneer San Francisco steel distributors, for an undisclosed amount. On January 6, 1955, Jorgensen assumed operation of the Tayler & Spotswood plant at 700 Pennsylvania Avenue, where activities will henceforth be carried on under the Jorgensen name.

The Jorgensen company is the largest distributor of steel and aluminum products in the west and southwest, with plants at Los Angeles, Oakland, Houston, Dallas and Tulsa. At its Los Angeles headquarters, the firm also operates a large forge plant, where various types of open and closed die forgings are manufactured.

New Frictional Tubing Anchor Is Hydraulically Actuated

The answer to the need for a simple, automatic, trouble-free Tubing Anchor is provided by McGaffey-Taylor Corporation. The new M & T Frictional Tubing Anchor holds the tubing string stationary by contact of three smooth friction surfaces hydraulically energized by means of pistons. The required hydraulic pressure is obtained by utilizing the differential fluid level between tubing and casing.

Calibrated holding power is provided by the proportionate piston area effective against the smooth drag springs which contact the casing wall. Although this fractional anchor holds on the upstroke of rod pumps regardless of tubing depth, the tubing string may be pulled wet in an emergency with little additional loading.

Among other advantages claimed by the manufacturer are: smooth-faced drag springs slide over collar recesses and other casing irregularities; no wickered slips to damage casing; fluid seals are maintained with simple O-rings; tubing can be tested going in or coming out of the hole; the anchor operates with equal efficiency upside-down or right-side-up; large by-pass area allows secondary strings to be run alongside.

More complete information on this new Tubing Anchor may be obtained from McGaffey-Taylor Corporation, 2877 Cherry Avenue, Long Beach 6, California.

THE WILDCAT

Running high and looking good,
Just like wildcats do and should,
Fifty feet and sometimes higher
It fills the owner's soul with fire.

Although there's a stretch in every line,
It's running high and looking fine.
The driller often slips a string
But that is just a trifling thing.

They cut a sand line, and make a splice
But only do it once or twice.
They use a steel line in a pinch—
The driller's never off an inch.

Geologists now take the dope,
And with a shining microscope,
They study sand, and shale, and lime,
To think this out takes lots of time.

With their colossal brains they ponder,
Mouth-opened farmers stand and wonder,
Lease brokers stand in line and wait,
He speaks, "She's running high, looking great."

A thrill that shakes the very ground—
They're gone before you look around—
Royalties and leases sell
She's running high and looking swell.

Three months have passed—another scene,
The rig is gone, the grass is green.
The gaping slush pit, cracked and dried,
An optimist, here, fought and died.

So this it is with wildcat wells,
They've spudded in with clanging bells.
When plugged and shouts of joy have died,
You wonder who the hell has lied.

Unknown

This delightful verse was sent along by Ashley DeWitt, a leading contract driller and oil producer.

Announcement was made recently that Continental Production Company has purchased from Continental Consolidated Corporation the latter company's ninety-eight producing wells in the Wilmington field.

These wells are located on the west berm of the Los Angeles County Flood Control channel and directionally drilled and bottomed under the City of Long Beach.

Continental Consolidated Corporation, formerly a subsidiary of the Phillips Petroleum Company of Bartlesville, Oklahoma, has been dissolved. The Phillips company, however, will continue to operate the properties for the new owners.

Continental Production is owned in its entirety by E. C. Simmons, whose offices are located at 303 North Sweetzer Avenue, Los Angeles.

Just a Reminder

OF THE WELL KNOWN

RUGGEDNESS AND DEPENDABILITY

Responsible for

LUFKIN'S

CONTINUED LEADERSHIP IN THE PUMPING UNIT FIELD

The unbelievably low maintenance cost of LUFKIN equipment is well known throughout the industry. Let LUFKIN keep your production costs at a minimum!

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Lufkin Equipment in CANADA is handled by

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PACIFIC COAST DIVISION—5959 So. Alameda, Los Angeles 1, Calif.

He helps teachers in 54,000 classrooms

Radio was barely out of the earphone stage 26 years ago when a new program was beamed from a San Francisco studio. It featured a string trio and was based on the idea that good music, when clearly understood, could entertain and teach, too. Actually, only 72 Western schools had radio sets then, but with that performance the Standard School Broadcast was "on the air."

Today, when Conductor Carmen Dragon lifts his baton, it's "time for the Standard School Broadcast" in over 54,000 classrooms through the West, Alaska and Hawaii. Counting children, teachers and home listeners, the program reaches a weekly audience of nearly 1½ million. That string trio has grown to a symphonic orchestra with a dramatic cast, choral group and guest vocal and instrumental artists. Selections range the musical alphabet from symphony to jazz. Each year's course follows a carefully planned outline published in a manual supplied to teachers by Standard to serve as a guide in blending music-enjoyment with subjects like art, literature, social studies. Now in its 27th year, the Standard School Broadcast is radio's oldest education program, heard today over more than 100 stations. Its goal is to help Western children gain an absorbing new interest in the world's good music, and —through music—a broader knowledge and understanding of the world around them.

Listen to the Standard School Broadcast every Thursday. Check your newspaper radio log for the time and station.

STANDARD OIL COMPANY OF CALIFORNIA

75 years of planning ahead to serve you better

LAUGH

THIS

OFF!!

A very pretty coed, president of the Science Club, asked the biology professor to address the group. The professor rose: "I have worked closely with your president for a number of years," he said, "and during that time we have been intimate . . . "

The group giggled and the professor tried valiantly to cover the slip: "And when I say intimate, I mean, of course, in a biological way."

A wife and husband were asleep. About 2 a.m., the wife dreamed she was in another man's arms. Then she dreamed she saw her husband coming toward her. In her sleep she shrieked out loud, "My husband!"

Her husband, awakened by her cry, leaped out the window.

The Boss has been very nervous since his stenographer said she was beginning to look upon him as a father.

A girl who tries to talk her boy friend into buying her a silk nightgown usually ends up with her boy friend trying to talk her out of it.

Beach Inspector: "Don't you know that a two-piece bathing suit is not allowed on this beach?"

Young Miss: "Very well, officer; which piece shall I take off?"

A fellow in Paris, enchanted by such U. S. phrases as "Can I drop you off somewhere?" is puzzled because an American girl he met at a cocktail party isn't speaking to him.

At the party's end he approached her and said brightly, "Can I throw you down someplace?"

We know a gal who never did drink because she was afraid it might turn into would alcohol.

The two girls were discussing various dates. "Why didn't you go to that good looking fellow's apartment?" Mary asked Lou.

"Because," Lou replied, "all I get when I go to his apartment is rum and coax."

Guest (at a wedding reception): "Are you the bridegroom?"

Young Man: "No ma'am, I was eliminated in the semi-finals."

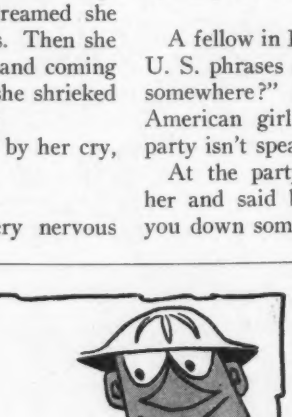
"Miss Jones," said the exasperated professor, "the quotation is, 'All men are created equal,' and not, 'All men are made the same way.' "

Going in the HOLE?

USE

GEOLOGRAPH

Time is money on a drilling well! You save *both* with Geolograph because its foot-by-foot drilling record helps do *A BETTER JOB IN LESS TIME!* That's why you always save when you log as you drill with Geolograph.



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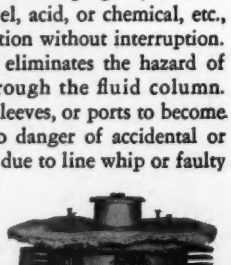
THE CAVINS DUMP BOTTOM...

is the tool you need for dumping any amount of cement, sand, gravel, acid, or chemical, etc., in a continuous operation without interruption. The full open throat eliminates the hazard of stringing a load through the fluid column. There are no valves, sleeves, or ports to become fouled or clogged—no danger of accidental or premature unloading due to line whip or faulty brakes.

THE CAVINS BRIDGING PLUG ... for use in combination with the CEMENT DUMP BOTTOM, is ideal for use in starting an off-bottom bridge or plug. Made of drillable material, the Cavins Bridging Plug can be used for temporary or permanent installations.



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